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THE
AMERICAN JOURNAL

OF THE
MEDICAL SCIENCES.

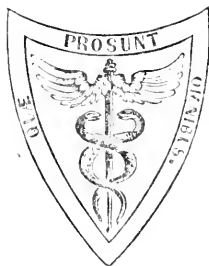
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FELLOW OF THE PHILADELPHIA COLLEGE OF PHYSICIANS; MEMBER OF THE
AMERICAN MEDICAL ASSOCIATION; OF THE AMERICAN PHILOSOPHICAL SOCIETY; OF THE
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NEW SERIES.

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TO READERS AND CORRESPONDENTS.

A number of communications have been received, which shall receive early attention.

Correspondents who desire their papers to appear as original articles in this Journal should send them to us *exclusively*. We must repeat what we have said on a former occasion, that the simultaneous communication of the same article to several journals, savours of the spirit of advertising, and gives rise to the suspicion that the aim of the author is rather to spread his own fame than to advance our science. We regret to have to repeat these remarks, but it has been rendered necessary by the breach of confidence and good faith of which one of our correspondents has been guilty, in sending his communication, after it had been printed off for the present number of this Journal, to a monthly journal, in the June number of which it has appeared.

We must request our correspondents to write their names distinctly. From a neglect of this, in our last number, page 565, the name of Henry A. Birrell, of Clinton, N. C., was printed H. A. Bizen.

The following works have been received:—

Sketches of Brazil; including New Views on Tropical and European Fever, with Remarks on a Premature Decay of the System Incident to Europeans on their return from Hot Climates. By ROBERT DUNDAS, M. D., for twenty-three years Medical Superintendent of the British Hospital, Bahia, &c., &c. London, 1852. (From the Author.)

On the Fallacies of Homœopathy, and the Imperfect Statistical Inquiries on which the Results of that Practice are estimated. By C. H. F. ROUTH, M. D., M. R. C. S., &c., &c., &c. London, 1852. (From the Author.)

Statistical Report of the Epidemic Cholera in Jamaica. By JOHN PARKIN, M. D. London, 1852. (From the Author.)

Résumé de Plusieurs Mémoires de Physiologie Expérimentale, lus ou présentés à l'Académie des Sciences dans l'année 1847. Par M. E. BROWN-SEQUARD, D. M. P. (From Dr. Brown-Sequard.)

Cases of Amputation: 1st. Below the Knee, subsequently to the removal of the Foot at the Tibio-Tarsal Articulation; and 2d, at the Shoulder during spreading gangrene, consequent on Disease of the Elbow-Joint; the application of a new saw in both. With Observations. By RICHARD G. H. BUTCHER, F. R. C. S. I., &c. Dublin, 1851. (From the Author.)

On the Treatment of Fractures in the vicinity of the Ankle-Joint; with Observations on the Practice of Tenotomy as facilitating Reduction of the Broken Bones. By RICHARD G. H. BUTCHER, F. R. C. S. I., &c. Dublin, 1852. (From the Author.)

The Principles of Surgery. By JAMES MILLER, F. R. S. E., F. R. C. S. E., &c. Third American, from the second and enlarged Edinburgh Edition. Illustrated by two hundred and forty engravings on wood. Revised, with additions, by F. W. SARGENT, M. D., Member of the College of Physicians of Philadelphia, Author of "Minor Surgery," etc. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

The Diseases of the Skin. By ERASMUS WILSON, F. R. S., Consulting Surgeon to the St. Pancras Infirmary. Third American, from the third London Edition. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

Lectures on the Principles and Practice of Surgery. By BRANSEY B. COOPER, F. R. S., Senior Surgeon to Guy's Hospital, &c. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

The History, Diagnosis, and Treatment of the Fevers of the United States. By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the

State of New York, &c. Third edition revised. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

A Treatise on the Practice of Medicine. By GEORGE B. WOOD, M.D., Professor of Theory and Practice of Medicine in the University of Pennsylvania, President of the College of Physicians of Philadelphia, &c., &c. Third edition, vols. ii. Philadelphia: Lippincott, Grambo & Co., 1852. (From the Author.)

Elements of Chemistry; including the Applications of the Science in the Arts. By THOMAS GRAHAM, F. R. S., Professor of Chemistry in the University College, London, &c., &c. Second American from an entirely revised and greatly enlarged English Edition. With numerous wood engravings. Edited with Notes. By ROBERT BRIDGES, M.D., Professor of Chemistry in Philadelphia College of Pharmacy, &c., &c. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

An Analysis of Physiology; being a Condensed View of its most important Facts and Doctrines. Designed especially for the Use of Students. By JOHN J. REESE, M.D., Lecturer on Materia Medica, &c., &c. Second edition revised and enlarged. Philadelphia: Lindsay & Blakiston, 1852. (From the Publishers.)

Du Rachitis, de la Fragilité des Os, de l'Ostéomalacie. Par E. J. BEYLARD (de Philadelphie), D. M. P., &c., &c. Paris, 1852. (From the Author.)

Faculté de Médecine de Paris. Thèse pour le Doctorat en Médecine présentée et soutenue le 2 Février, 1852. Par A. A. VERNEUIL, de Paris. Recherches sur la locomotion du cœur. Paris, 1852. (From Dr. Brown-Séquard.)

Thèse pour le Doctorat en Médecine. Par M. J. BENJAMIN COSTE. Recherches Experimentales et Observations Cliniques sur le rôle de l'Encéphale, et particulièrement de la protubérance annulaire, dans la respiration. Paris, 1851. (From Dr. Brown-Séquard.)

Thèse pour le Doctorat en Médecine. Par F. W. BONNEFIN. Recherches Experimentales sur l'action convulsivante des principaux poisons. Paris, 1851. (From Dr. Brown-Séquard.)

Twenty-third Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Transmitted to the Senate and House of Representatives, Feb., 1852. Philadelphia, 1852. (From Dr. R. A. Given.)

Ninth Annual Report of the Managers of the State Lunatic Hospital of the State of New York. Transmitted to the Legislature, Feb., 1852. Albany, 1852.

Third Annual Report of the Managers of the St. Joseph's Hospital, March, 19, 1852. Philadelphia, 1852. (From Dr. W. E. Horner.)

Thirty-fifth Annual Report of the state of the Asylum for the Relief of Persons deprived of the use of their Reason.

First Annual Report of the Trustees of the New York State Asylum for Idiots.

Sixty-fifth Annual Report of the Regents of the University of the State of New York. Made to the Legislature of the State of New York, March 1, 1852. Albany, 1852. (From Dr. T. R. Beck.)

Report of the Eastern Lunatic Asylum, in the city of Williamsburg, Va., 1851. Richmond, 1852. (From Dr. J. M. Galt.)

The Annual Discourse before the Philadelphia County Medical Society, delivered Feb. 10, 1852. By the President, SAMUEL JACKSON, M.D., formerly of Northumberland. Published by the Society. Philadelphia, 1852.

The Organizing of the American Medical Association, read before the Philadelphia County Medical Society, Feb., 1852. By the President, SAMUEL JACKSON, M.D., formerly of Northumberland. Philadelphia, 1852.

A Memorial to the Legislature of the State of Louisiana, for the Registration of Births, Marriages, and Deaths. Respectfully submitted, by J. C. SIMONS, M.D., on behalf of the Louisiana State Medical Society, and the Physico-Medical Society of New Orleans.

An Introductory Lecture delivered at the opening of the 32d Session of the Medical College of Ohio, October 15, 1851. By R. D. MUSSEY, M.D., Professor of Surgery. Cincinnati, 1851. (From the Author.)

Valedictory Address to the Graduates of the Philadelphia College of Pharmacy, delivered in Sanson Street Hall, March 18, 1852. By WM. PROCTOR, JR. Published by the Class. Philadelphia, 1852. (From the Author.)

An Address to the Graduates of the Medical Department of the St. Louis University. Session 1851-52. By CHARLES A. POPE, M. D., Professor of Surgery. St. Louis, 1852.

Valedictory Address to the Graduating Class of the Medical College of the State of South Carolina. Delivered by appointment of the Faculty, at the Public Commencement, held in St. Andrew's Hall, on the 12th of March, 1852. By E. GEDDINGS, M. D., Professor of Surgery. Charleston, 1852.

Lecture, Introductory to the Courses of the Eleventh Session of the Philadelphia College of Medicine. Delivered March 8, 1852. By RUSH VAN DYKE, M. D., Professor of Materia Medica and General Therapeutics. Published by the Class. Philadelphia, 1852.

The Vital Statistics and Sanitary Condition of Memphis, Tennessee. An Anniversary Address. Delivered, by appointment, before the Memphis Medical Society. By GEORGE R. GRANT, M. D. New Orleans, 1852. (From the Author.)

On the Sanitary Condition of Memphis, Tennessee; being a Reply to Dr. Grant. By G. A. SMITH, M. D., Surgeon to the Memphis Charity Hospital. Reprinted from the New Orleans Medical and Surgical Journal. New Orleans, 1852.

Constitution of the American Medical Society in Paris. Instituted November 15, 1851. Paris, 1852.

Medical Commencement of the University of Pennsylvania; held on Saturday, April 3, 1852; with a Valedictory. By SAMUEL JACKSON, M. D., Professor of the Institutes of Medicine. Philadelphia, 1852. (From Dr. Horner.)

Catalogue of the Trustees, Faculty, and Students of the Medical College of the State of South Carolina. Session of 1851-52. Charleston, 1852.

Second Annual Announcement of the Medical Department of the University of Nashville. Nashville, 1852.

The following Journals have been received in exchange:—

Vierteljahrsschrift für die praktische Heilkunde herausgegeben von der medicinischen Facultät in Prag. Red. Dr. J. HALLA und Dr. J. V. HASNER, VIII. and IX. Jahrgang, 1852.

Gazette Médicale de Paris, Nos. 7, 8, 9, 10, 11. 1852.

Journal des Connaissances Medico-Chirurgicales. Publié par le Dr. A. MARTIN-LAUZER. March, 1852.

Monthly Journal of Medical Science. Edited by Professors CHRISTISON, SYME, SIMPSON, BENNETT, and Drs. MACLAGAN and ROBERTSON. March, April, June, 1852.

Medical Times and Gazette. March, April, May, 1852.

The British and Foreign Medico-Chirurgical Review. April, 1852.

London Journal of Medicine. April, May, June, 1852.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. April, 1852.

Dublin Medical Press. March, April, May, 1852.

The Dublin Quarterly Journal of Medical Science. May, 1852.

Provincial Medical and Surgical Journal. Joint-Editors, W. H. RANKING, M. D., and J. H. WALSH, Esq. March, April, May, 1852.

Canada Medical Journal. Edited by R. L. McDONNELL, M. D., and A. M. DAVID, M. D. March, April, May, 1852.

The Charleston Medical Journal and Review. Edited and Published by D. J. CAIN, M. D., and P. PEYRE PORCHER, M. D. March, May, 1852.

The American Journal of Insanity. Published by the New York State Lunatic Asylum. Utica: April, 1852.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by Wm. PROCTOR, Jr., Professor of Pharmacy, &c. &c. April, 1852.

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by Isaac Parrish, M. D. April, May, June, 1852.

The Stethoscope and Virginia Medical Gazette. Edited by P. CLAIBORNE GOOCH, M. D. April, May, June, 1852.

The Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M. D., and T. S. BELL, M. D. May, June, 1852.

The New York Journal of Medicine. Edited by S. S. PURPLE, M. D. May, 1852.

The North Western Medical and Surgical Journal. Edited by W. B. HERICK, M. D., and H. A. JOHNSON, M. D. May, 1852.

The Western Lancet. Edited by L. M. LAWSON, M. D., and GEO. MENDENHALL, M. D. April, May, June, 1852.

The Ohio Medical and Surgical Journal. Edited by RICHARD L. HOWARD, M. D. May, 1851.

The New Orleans Monthly Register. Edited by A. FOSTER AXSON, M. D. April, May, June, 1852.

The Transylvania Medical Journal. Edited by E. L. DUDLEY, M. D. April, May, June, 1852.

The New York Medical Gazette and Journal of Health. Edited by D. M. REESE, M. D. April, May, June, 1852.

The Boston Medical and Surgical Journal. Edited by J. C. V. SMITH, M. D. April, May, June, 1852.

The Medical Examiner. Edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D. April, May, June, 1852.

The North Western Medical and Surgical Journal. Edited by JOHN EVANS, M. D. March, 1852.

The New Hampshire Journal of Medicine. Edited by EDWARD H. PARKER, M. D. April, May, June, 1852.

The New York Journal of Pharmacy. Published by Authority of the College of Pharmacy of the City of New York. Edited by B. W. MCCREADY, M. D., Professor of Mat. Med. and Pharm. January, February, March, 1852.

The Opal, devoted to Usefulness. Edited by the PATIENTS OF THE STATE LUNATIC ASYLUM. Utica: New York. April, May, June, 1852.

The American Journal of Dental Science. Edited by CHAPIN A. HARRIS, M. D., D. D. S., and A. A. BLANDY, M. D., D. D. S. January, 1852.

Buffalo Medical Journal. Edited by AUSTIN FLINT, M. D. April, May, June, 1852.

Nashville Journal of Medicine and Surgery. Edited by W. K. BOWLING, M. D. April, May, June, 1852.

The American Journal of Science and the Arts. Edited by Professor B. SILLIMAN, B. SILLIMAN, JR., and JAMES D. DANA: and in the Departments of Chemistry and Physics. By Dr. WOLCOTT GIBBS, May, 1852.

The East Tennessee Record of Medicine and Surgery. Edited by FRANK A. RAMSAY. April, 1852.

L'Union Médicale de la Louisiane, Revue Mensuelle. Editeurs—Redacteurs CHARLES DELERY, D. M. P., et EDWARD MARTIN, D. M. P. Nos. 3, 4, 5, 1852.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, London; or to John Wiley, or G. P. Putnam, New York; or W. D. Ticknor, Boston; or M. Hector Bossange, Lib. quai Voltaire, No. 11, Paris, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

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XX. Homeopathy: An Examination of its Doctrines and Evidences. [Fiske Fund Prize Dissertation.] By Worthington Hooker, M. D. New York, 1851: 12mo. pp. 146.	
On the Fallacies of Homœopathy, and the Imperfect Statistical Inquiries on which the Results of that Practice are estimated. By C. H. F. Routh, M. D., M.R.C.S. London, 1852: 8vo. pp. 85.	191
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ART. I. — *Medical and Surgical Notes of Campaigns in the War with Mexico, during the years 1845, 1846, 1847, and 1848.* By JOHN B. PORTER, M. D., Surgeon U. S. Army.

IN my former paper, some reasons were given for preferring the circular mode of amputating limbs to the flap operation, especially in military surgery. They are the following:—

The wound in the circular is not so extensive as in the flap operation; and in a bad atmosphere, or in an insalubrious country, this is a great advantage.

The bone is sooner and more easily sawed through, the arteries are more easily secured, and the stump is more quickly and easily dressed in the circular than in the flap operation.

A better stump is made in the circular than in the flap operation. This is the strongest argument in favour of the circular mode of operating.

Only a few cases of amputation were given in the former paper, which were those having something peculiar in the circumstances attending them. Common cases are of no interest, and were not included.

Since amputation by the circular incisions is not the fashionable mode, it may be well to cite the opinions of a few of the most experienced authors on the subject, especially of those who have seen service in the field.

Baron Larrey says:—

“I have had opportunities of comparing the two methods; and the uniform success which has followed the circular amputation has convinced me that it possesses more advantages than the operation with the flaps, as still recommended by some modern practitioners.”—*Memoirs*, vol. ii. p. 102.

Mr. Guthrie says:—

“I always divide the skin and fascia by the first circular incision down to the muscles; they will then retract with very little assistance, from the point of

the knife at particular spots of adherence, instead of the useless and painful dissection of the skin from the fascia, which formerly took place."—*Clin. Lect.* p. 6, 1836.

"In primary amputations, or in the natural state of parts, the loose attachment of the cellular membrane to the fascia and to the muscles beneath admits of much retraction of the integuments; and when the first incision is made through the fascia, they retract considerably; which is greatly increased if the assistant grasps the limb with both hands previously to the incision being made, and pulls the integuments as much upwards as possible, putting the skin to be divided on the stretch, and rendering its division more easy to the surgeon and less painful to the patient. If the limb be also firmly grasped below, and the integuments made tense downwards, the division of the skin will be more readily effected, and so much of the integuments will be saved in consequence of the retraction upwards, that it will not be necessary to dissect them back in the manner recommended in many surgical works. It will be sufficient to separate the threads of fascia adhering below with the point of the same knife, to obtain an ample covering for the stump, without putting the patient to the torture of having his skin pinched and dissected back for the space of a couple of inches, and for four or five minutes. Bromfield and Alanson inveigh against this practice; and military surgeons during the last war proved it to be so unnecessary that it is now acknowledged in general to be so by those who formerly recommended it; but in the adoption of it, they do not at all seem to be aware that the fascia and integuments should be divided by the same incision, when the whole will retract much further than the skin and cellular membrane could do if the fascia remained to be divided by the second incision. I consider this simple direction to be of great importance in the saving of time and pain to the patient, whilst it adds to the facility with which the operation is accomplished, and prevents the lodgment of matter between the skin and the muscles, which frequently occurs in the usual method of doing this part of the operation."—*On Gunshot Wounds*, p. 274.

But Mr. Guthrie, it appears, operated by both methods.

"If a cannon shot strike the back part of the thigh, and carry away the muscular part behind, and with it the great sciatic nerve, amputation is necessary, even if the bone be untouched; for, although the wound might in some measure heal, the motion of the leg would be lost, and it would become an insupportable burden to the patient. In this case, I would not perform the operation by the circular incision, but would preserve a flap from the fore part or sides, as I could get it to cover the bone, which should be short; I would then cut away the injured part, leaving a clear incised surface. The object to be gained by this kind of operation is to obtain a longer stump than could be made by the circular incision. * * * But if the injury committed on the soft parts does not render this possible, or enable the surgeon to save a longer stump, the circular incision is to be preferred."—*Ibid.*, pp. 370, 371.

"The flap operation ought only to be done at the upper part of the thigh, is very similar to that proposed for the hip-joint, and is, in some instances, preferable to the circular incision, as it permits a longer stump to be saved, where the integuments are not sound in a circular direction."—*Ibid.*, p. 383.

"Amputation of the leg is performed in two ways: by the circular incision, and by the flap operation; the circular incision being most applicable to the fleshy part of the leg about the calf; the flap operation to the lower and tendinous part near the ankle, where sufficient integuments and muscle cannot be obtained to make a good cushion for the bones in the usual manner."—*Ibid.*, p. 400.

"Amputation of the arm by the common circular incision is to be practised only in the space between the lower edge of the insertion of the pectoralis major and the elbow-joint. More serious wounds may be inflicted in this space, however, and the arm be preserved, than in any other part of the extremities."—*Ibid.*, pp. 512, 513.

Mr. Guthrie is in favour of the flap in the lower part of the forearm, but

"when the operation is to be performed above the middle, it is best done by the circular incision."

Mr. Hennen says:—

"I have myself, on two late occasions, performed amputation of the thigh so very high up, nearly embracing the trochanter, and consequently the capsular ligament of the joint, that a very few strokes of the scalpel would have effected the dislocation; more especially, if the head and neck of the bone had been split to pieces, as they very often are. My incision was the common circular one; and I did not, as I once before had done, make the taking up of the femoral artery a necessary preliminary measure; I tied the arteries in succession as they were cut, an able assistant pressing on that in the groin."—p. 216.

"In commencing an amputation below a joint, and particularly in a large lower limb, I would recommend placing the right hand under the limb, and carrying it to some extent round, in the position meant to commence the incision, and then *dropping* the knife into the hand, instead of running the hand ready armed with the knife beneath the part."—p. 217.

"By cutting the first third, or nearly so, of the circle, principally with the heel of the knife, we shall always be enabled to complete the external incision with one sweep of the instrument, a matter of some relief to the patient in point of pain, and of increased facility to the operator, in forming a smooth even edged line."—p. 217.

"In the forearm almost every possible error of projecting bone, or insufficient covering, is effectually obviated by the flap operation."—p. 218.

I have amputated the forearm at all points by the circular method, and never found the least difficulty in making a good stump. It is an easy operation for the surgeon.

Mr. Hennen was generally in favour of the circular method, for he says, in addition to the above remarks on amputation of the large limbs:—

"In a small limb, I have repeatedly performed the operation with one sweep of the knife, cutting obliquely inwards and upwards, to the bone. The only objection that strikes me to operating in this mode is, that the arteries are sliced obliquely like a writing pen, instead of being fairly cut across, and that if this is not kept in remembrance, secondary hemorrhage may take place after the vigour of circulation is restored, in consequence of the whole circumference of the vessel not being included in the ligature."—p. 218.

The slicing of the arteries obliquely like a "writing pen," instead of fairly cutting them "across," is an objection to the flap operation. The subject was alluded to in my first paper.

S. Cooper says:—

"Amputation is performed in the continuity of a member, or at one of its articulations, each of which modes, however, cannot always be practised indifferently, the choice depending upon the situation, extent, and nature of the disease, or injury, for which the removal of the part becomes indispensable. In all amputations done at the joints, it is the general practice to make a flap for covering the end of the bone; but when the operation is performed at another part of the limb, it is frequently at the option of the surgeon, whether the method adopted be *amputation with a flap*, or *amputation by a circular incision*. In all common instances, the latter practice receives the approbation of many of the best modern surgeons; but there are particular cases, in which a deviation from this mode, in favour of the flap operation, is commendable and useful, as I shall hereafter notice." The notice is what follows: "The chief objections to the operation (by the flap), when proposed as the common method, arise from two considerations: first, its greater pain than that of the usual mode; secondly, its shortening the limb more than is necessary. Yet, all British surgeons agree that flap amputations are generally the best, when a limb is to

be taken off at a joint, and also in every instance in which the skin and soft parts are quite sound on one side of a member, while on the other they are diseased, or destroyed for a considerable extent, upwards. Here, amputating with a flap will be the means of preserving more of the limb than could be saved by the circular incision, and becomes praiseworthy on the very same principle which renders the latter method most eligible under ordinary circumstances."

Mr. Syme, when a follower of Mr. Liston, used the following language:—

"That the circular operation is tedious, every one will allow who reflects upon the multiplicity of its steps. First, there is the cautious circular incision of the skin; the change of knife; the dissection of the skin; its turning back; the change of knife; the adjustment of the assistant's fingers, that they may not be cut off by the relentless sweep which divides the muscles; the change of knife; the separation of the muscles from the bone; the division of the periosteum; the application of the retractors; and, lastly, the sawing of the bone."

These are formidable charges against the circular method of amputating. But, instead of the "cautious circular incision of the skin," the skin and fascia are to be boldly divided down to the muscles; little or no "dissection of the skin" is necessary; no "turning back" is required; nor is a change of knife thought of, excepting in peculiar circumstances. If the "assistant's fingers" are in the way, they deserve to be cut off; but this is a "game that two can play." Some years ago, I assisted an operator to amputate the thigh, by the flap operation, near the hip-joint. My part of the performance was to command the artery at the os pubis, which was effectually done; but the surgeon came near maiming me for life, and I begged him, in the name of a kind Providence, to spare my fingers, as they might be of use hereafter. This circumstance convinced me that an awkward operator can cut off fingers as well in the flap as in the circular method. The "separation of the muscles from the bone," if required, may be done with the amputating knife; the "division of the periosteum" may be made with the same knife; and the "sawing of the bone" is as necessary in the one operation as in the other.

But Mr. Syme speaks of the two methods (*Monthly Journ. of Med. Sci.*, Nov. 1846) very candidly, as follows:—

"Notwithstanding the share I took in introducing the flap operation, and the confident persuasion of its superiority formerly entertained, I have long felt occasion to point out some serious inconveniences apt to attend its performance; and I am now satisfied that there are circumstances in which the circular incision ought to be preferred."

After giving the arguments for and against each method of operation, Mr. Syme goes on to say:—

"In subjecting these various arguments, on both sides of the question, to the test of experience, it may be remarked that they are not all of equal value; some of them relating to matter of mere convenience, while others regard consequences of the most serious nature. The great questions at issue are, which operation least endangers the patient's life? and which affords the most comfortable stump? Now, every one who has witnessed the flap operation extensively and indiscriminately for amputation of the thigh, must have seen a large proportion of deaths, and in the event of recovery, not unfrequently a condition of the stump no less unsightly than inconvenient. Such are the undeniable facts, and their explanation presents little difficulty to any one who has had sufficient opportunity of observation.

"So far as the mere performance, or early consequences of the flap operation

are concerned, nothing can be more satisfactory. The incisions are executed almost instantaneously, and the whole process is completed with a degree of facility, dispatch, and ease to the patient that presents a remarkable contrast, when compared with the circular method.

"When the flaps are placed together, it seems as if nothing could prevent their perfect union, so as to effect a speedy cure, and afford a comfortable covering to the bone. In some cases these favourable anticipations are fully realized; but, though a good many days, and even one or two weeks, may elapse without making manifest the disappointment to be experienced, it much more frequently happens that the soft parts, however ample they may have appeared in the first instance, gradually contract and diminish, until care is required to keep their edges in apposition over the bone, which sometimes, notwithstanding every precaution, at length becomes denuded, and presenting itself to view, whether dead or living, proclaims the unavoidable misery of a sugar-loaf stump. This distressing result depends upon the vital contractility of the muscular tissue, which, continuing in operation so long as the cut surface is not prevented from yielding, by the formation of new adhesion, not only lessens the mass of flesh provided for covering the bone, but gradually retracts it together with the superjacent integuments. The effect thus produced is favoured by the following circumstance. In the first place, by cutting the flaps of such moderate length that, when brought together, they merely meet without straining; secondly, by sawing the bone where it is exposed, by simply separating the flaps, instead of drawing the muscles back, so as to divide it at a considerably higher point; and thirdly, by performing the operation at the lower third of the thigh. Mr. Liston recommends amputating at the middle of the bone, upon the ground of thus forming a more convenient stump for the attachment of an artificial limb, than would result from operating at a lower point. For my own part, I have, during many years past, advised this, to prevent the great risk, or almost certainty of protrusion, to which the bone is exposed when divided at or near its lower third. But the flap operation being thus objectionable below the middle of the thigh, and even higher up, seldom in the end furnishing more than a covering of skin to the bone, it may be inquired, how far the circular method deserves adoption in amputation at the lower third?

"The true object of the circular incision is, to provide a covering of skin for the bone: and a great error has been committed by many, indeed almost all the would-be improvers of this operation, in directing their attention to modifying the division of the muscles, as if any form of their section could materially influence the result. All the attempts with this view have been directed so as in one way or other to give the cut surface of the muscles a conical form, evidently under the impression that they serve to assist in covering the bone. Now, it is quite clear that, if the ample masses of flesh afforded by the flap operation yield to the retractile agency of their tissue, the scanty portion obtained by any form of circular incision cannot have the slightest effect in improving the condition of the stump. These wrong-directed efforts would have done no harm, unless they had withdrawn attention from what was really required to render the result satisfactory. In this way, however, they have seriously opposed improvement, and in my own case, I confess, long prevented the truth from being distinctly seen.

"The perfect condition of the stump resulting from amputation at the ankle, where there is nothing but integument to protect the bone, led me to conclude that, if the circular operation could be performed with the certainty of providing such a covering, it might be employed with advantage in the lower third of the thigh; which, being the thinnest part of the limb, most readily admits of forming a stump composed merely of skin. There is, also, in operating here, plenty of room to apply the tourniquet without impeding the incisions or retraction of the muscles, and the size of the wound inflicted is, of course, much smaller than of an amputation at the middle of the thigh. In the course of the summer, I have performed the operation four times, on adult persons, with the effect of confirming the favourable expectations which the considerations just mentioned had led me to entertain; and I now feel warranted to advise that, whenever a case

requiring amputation of the thigh admits of the limb being removed at its lower third, the circular method should be employed.

"The compress of the tourniquet should be applied over the artery close to the groin. Instead of the old-fashioned, concave-edged, thick-backed amputating knife, a middle-sized one of the kind employed for the flap operation will be found more convenient. The incision of the skin should be made as near the knee as possible, not in a circular direction, but so as to form two semilunar edges, which may meet together in a line from side to side, without projecting at the corners. The fascia should be divided along with the integuments, which are thus more easily retracted—not by dissecting and turning them back, but by steadily drawing them upwards, through means of the assistant's hands firmly clasp ing the limb. This should be done to the extent of at least two inches, or more, if the thigh is unusually thick. The muscles are then to be divided as high as they have been exposed, by a circular sweep of the knife, directly down to the bone, from which they must be separated and retracted with the utmost care. In ordinary circumstances, the retraction should not be less than two inches, and, before using the saw, the bone must be completely exposed by means of a cloth split up the middle, applied on each side of it, and forcibly held up.

"If due attention be paid to these directions, I feel confident that amputation by circular incision at the lower third of the thigh will afford satisfactory results; and should, therefore, be preferred to the flap operation at a higher part of the limb when the circumstances afford room for choice. Where it is necessary to amputate at or above the middle of the bone, there can be no question as to the propriety of operating by the flap method."

"Before arriving at the conclusion which has just been explained, I thought that amputation at the knee might be employed with advantage, as a substitute for the flap operation at the middle of the thigh; and my own opinion would still be so if this alternative afforded the only room for choice. I operated at the knee with complete success in three cases: two of which were diseases of the joint; and the other a recent injury from the leg having been torn off by machinery. But as the soft parts required to form the stump in this situation are apt to be so deranged in their texture as to delay, though not prevent recovery, and thus in some measure counterbalance the advantage of exposing cancellated instead of dense bone, together with the contents of its medullary cavity, I do not persist in advocating amputation at the knee, now when satisfied that the operation by the circular incision, if performed with due care on proper principles, may be employed at the lower third of the thigh safely and advantageously."

The long extracts from Mr. Syme's able paper are warranted by the importance of the subject, and they deserve serious consideration. The important questions are

1. Which operation least endangers the patient's life?
2. Which affords the most comfortable stump?

The contractility of the muscular tissue produces a bad stump in the flap operation, while the contractility has no effect in the circular method. Why is this? It is owing to the union of the skin, fascia, and muscular fibre in one mass in the flap operation, and to the separation of the skin and fascia from the muscle in the circular method. The contractility of the muscle separates the whole flap, skin, fascia, and muscle completely from the bone; while the muscular tissue in the circular mode may contract to such a degree as to allow the bone to project beyond it; but this is of little consequence, for the skin and fascia still form a covering. As Mr. Syme says: "The true object of the circular incision is to provide a covering of skin for the bone."

Let this be kept in view in amputation of the thigh ; save plenty of skin and fascia together ; cut the muscles high up, and directly down to the bone if you please ; perhaps sever them somewhat from the bone with the point of the knife ; and raise them well up with the retractor before sawing the bone. By attending to these particulars, with the grand object of the circular incision in view, it is scarcely probable that the bone will project in the progress of the case. The radical difference between the two operations consists in the formation of the covering for the bone, which is principally muscular in the true flap operation, producing inconveniences and serious consequences ; while the flap or covering of the bone by the circular incision is formed principally of skin, cellular substance, and the fascia. To attain the object of throwing out the muscular tissue, so that its contractility can exert little or no influence on the covering of the bone, is worth all the trouble which the opponents of the circular incision bring so prominently forward, even to the repeated changes of the knife. This is the great distinction between the circular and the flap operations. In my first operation above the knee, I was greatly troubled about the result, fearing there was not sufficient muscle, though there was plenty of integument ; but the result was highly favourable. Had I reflected on the subject, my mind would have been at ease, and at the present time I would throw all fears of a bad stump, ulceration, projection of bone, &c., to the winds.

Mr. Liston, however, does not deign to give a description of the circular method of amputation in his *Elements of Surgery*, notwithstanding the respectable names in its favour ; but seems to consider his *dictum* fully sufficient to settle the question. Mr. Liston says :—

“Hitherto these general observations on amputation have regarded the flap operation only ; the circular method has not been mentioned. The reason is, that the circular amputation has been, it is hoped, in a great measure abandoned in this country. And its inferiority to the method by flaps is so obvious and so generally acknowledged, that detail of the different steps of the operation is, I conceive, here altogether unnecessary. It is more tedious in performance, more painful to the patient, does not afford so good a covering for the end of the bone, and consequently not so convenient and useful a support for an artificial limb, and the cure of the wound is protracted. The stump is almost always conical, the end of the bone is, ultimately at least, covered only by integument, and from even very slight pressure this is apt to ulcerate ; exfoliation of the bone follows to a greater or less extent, or unhealthy ulcer of the soft parts continues along with caries of the bone, and partial death of its surface ; and at length it becomes necessary to either perform a second amputation, or to curtail the length of the bone. It may sometimes succeed tolerably well when there is but one bone ; when there are two, it is altogether inadmissible. In very muscular limbs, when amputation is demanded on account of destruction of the bones and joints, with laceration of the soft parts, as when the patient is not required to have pressure made on the stump, it suits well to make the flap of integument only, and to cut the muscles short, as will be noticed more fully. The advocates for the circular amputation, my excellent friend, Sir George Ballingall and others, wish it to be believed (and this is their main argument), that the exposed surface of the flaps is much greater than that in their favourite method. Some of the philosophers of the modern Athens have been applied to, and have measured, it is said, the area of the one and the other, and given their verdict in favour of the roundabout incision.”

The advocates for the circular amputation may not wish to take anything on trust, not even the views of Mr. Liston; but it is to be hoped they are willing to permit every one to enjoy his own deliberately formed opinion. Fifty or one hundred years ago, some acknowledged leader might have dictated to the whole body of the profession; but those days have fortunately gone by. It is to be regretted that Mr. Liston did not remember this, and recollect that the time had passed when men and measures, if they did not square with the dictator's ideas, might be, in the classic language of Mr. John Hunter, easily "cracked like so many vermin as they come before me." In the present age the profession acknowledges no leader. *Nullius addictus jurare in verba magistri.*

Let us look at Chelius:—

"As regards the preference of the several modes of proceeding in amputation of the limbs in their continuity, I must, according to my own experience, prefer amputation by the circular cut, and that method indeed, in which the skin is divided and drawn back, and at its edge the cut carried vertically through the muscles down to the bone, and then the muscles still remaining attached to the bone cut through still higher, and thus a conical surface of wound formed. The superior advantages ascribed to the flap operation, to wit, a better covering of the stump with muscle, more speedy union, and therewith a shortening of the cure, over the circular operation just recommended, are groundless. *In reference to the first point, Bruninghausen makes a remark which I have also observed, that the covering of the stump with muscle may indeed be effected at the moment of union and for some time, but that after a longer period the bone is merely covered with skin.*"

The italics are my own. At this point Mr. South remarks:—

"[This observation, as regards both flap and circular amputations, will be found confirmed by every one who examines a stump a sufficient length of time after its complete healing.]"

"On the other hand, after amputating the *thigh with merely saving skin, I have never seen protrusion of the bone.* But it must be held as an objection to flap operations that tying the vessels which are obliquely cut through, and often wounded in several places, is more difficult, and the number of vessels to be tied is always greater than with the circular cut, that the wound is larger, and therefore, if union do not take place, wasting suppuration is to be earlier feared. In other respects, I do not consider the dispute as to the preference of the circular or flap operation of so much consequence as many do, as I am convinced that the successful result depends not merely on the mode of operation, but on the manner of its performance, and especially on the proper conduct of the after treatment. The flap operation, however, must always be considered more suitable when the amputation is performed at the upper third of the thigh; when the limb cannot be brought into a proper posture for performing the circular cut, and when the destruction of the soft parts is such that by the flap considerable saving may be effected."—*South's Chelius*, vol. iii. p. 651.

Mr. South remarks:—

"As regards these serious objections to circular operations, I must observe that, in the large hospital with which I am connected, for many years I scarcely ever witnessed the performance of any other than circular amputations, except on the forearm, and that the ugly consequences which Liston has detailed were of great rarity, and not, I believe, attributable to the mode of operation. Of late years, however, more flap operations have been performed among us than previously, and probably their relative number is now about the same. I have performed about an equal number of each, and the result has been so nearly the same that, in most cases, I hardly think one is to be preferred to the other.

The flap operations are more smart and showy in their performance, but in their result may be as untoward and unsatisfactory as circular operations have been stated to be."—*South's Chelius*, vol. iii. p. 653.

"At a meeting of the Reading Pathological Society, Mr. Bulley read a short paper on some of the disadvantages which he considered to attend the flap operation for amputation. He thought it was a much more painful operation than the circular one, and that, in the aggregate, it took a longer time in the performance. More painful from the greater extent of the integument divided, and from the oblique incision of the nerves; and longer in performance from the oblique section of the vessels, rendering them unable to collapse, and thus, with a greater difficulty in securing them, a greater number of arteries required ligature. An eminent surgeon in London had mentioned to him that he had been obliged to apply twenty-five ligatures after a flap operation in which there was reason to believe that, had the circular method been employed, three or four might have been sufficient."—1846.

Mr. Rutherford Alcock has found, with reference to the main question of comparative mortality, that his results are by a fraction disadvantageous to flap amputations. He is not, therefore, prepared to agree in what was said to be the growing opinion, that this operation would in time completely supersede the other.—1841.

Sir George Ballingall says:—

"I know of no comparative estimate of the results of amputations performed by the circular incision and by the double flap, which will enable us to decide their respective merits by the test of experience; but in instituting any comparison between these operations, one of the first circumstances which strikes a surgeon is the different extent of cut surface left by the one operation and by the other. It has long appeared to me that the difference in this respect is much greater than many surgeons are aware of; and I have often remarked that the extent of cut surface exposed by the double flap operation appeared to me nearly double that left by the circular incision. I was not, however, aware until very lately that in making this statement I was so near the truth."

"It is not, however, the extent of cut surface alone that seems to me an objection to the flap operation, but in proportion to the extent of this surface is the number of vessels requiring ligature; in amputation of the thigh, for instance, when the operation is undertaken for long-standing disease of the knee-joint, and performed very low down, we have the flaps, particularly the extreme points of them, often highly vascular; and it is no uncommon thing to find from eight to ten vessels requiring ligature, whereas half this number is the more usual proportion in the circular operation. It will be easily understood that a vessel which requires a ligature in the lower edge of the flap may, in its progress towards it, have given off several branches, each of them requiring the same security, and many or all of which would have been removed along with the distal part of the limb by the circular incision. It will also be understood that in operating by the double flap the bloodvessels are often cut obliquely; sometimes, indeed, they may be seen scooped like a writing pen; and although this may be of no great moment when these vessels are carefully and accurately secured with ligatures, yet this is obviously a division of the vessel unfavourable to its retraction and rapid closure; and if in consequence of the faintness of the patient, a vessel should not bleed, and not be secured at the time of the operation, it will be more liable to bleed afterwards when the patient rallies and the blood returns perhaps with increased impetus to the wounded point. In proof of this, I appeal to the observation of my colleagues here, where the flap operation has been almost exclusively performed for many years past. Hemorrhage perhaps scarcely coming under the usual description of secondary hemorrhage, but occurring a few hours after the patient is laid in bed, is an almost every-day occurrence; in fact, the practice of delaying the complete dressing of a stump for several hours after the operation has been advocated, in addition to other reasons, upon the ground of its affording a facility to meet

this sort of secondary hemorrhage. In one case I have seen nine vessels secured upon the table, and eleven afterwards; and in a very recent case, we had eight or nine vessels secured before the patient left the operating table, and the same number within an hour afterwards, in consequence of hemorrhage from the stump. A very striking illustration of the liability of flap operations to secondary hemorrhage has been mentioned to me by Mr. Alcock, who states that 'in two cases at Vittoria of double amputation, one leg in each was amputated by flap, and another by circular incision; from the former in both patients there was secondary hemorrhage, and from neither of the latter.'"

"The state of the nerves in flap operations is another most important consideration; the remark I have made as to the ramifications of the arteries will in some measure apply to the nerves, and we sometimes see large portions of nerves exposed upon the surface of the flap, or projecting loosely from it."

"The next point of view in which the two operations may be compared is the covering left for the extremity of the bone, and the favourable state of the parts for an accurate approximation, and speedy healing of the wounds. In both these respects the comparison is highly in favour of the flap operation, according to the views entertained, and the practice followed by the surgeons of this country; but should circumstances occur to prevent union by the first intention, it is obvious from what has been said that the flap operation leaves a larger quantity of suppurating surface. Facility and rapidity of execution are seldom a fair ground of preference for one operation over another; and can never be so when other important considerations are to be sacrificed to them; it is indeed possible to conceive cases, particularly in military or naval life, where, *ceteris paribus*, the saving of time may be an object; but the rapidity with which the flap operation can be executed has, I fear, been sometimes made a ground of preference where no such motive existed; and I cannot divest myself of the suspicion that the feeling of rivalry has in some measure led to the indiscriminate practice of flap operations. It is not every young surgeon who can stand by undisturbed and hear it said, and hear it repeated that his colleague will amputate a limb in so many seconds, while he requires perhaps as many minutes. The flap operation is a seductive one, and I speak from my own experience when I say that it is an operation which one is unwilling to relinquish after having once experienced the comparative facility of its execution. It will be seen, however, that I am quite prepared to discriminate between those cases in which the flap is to be considered the preferable operation, and those in which the circular incision is the best. I may here state generally that in operations at the joints, the adoption of the flap operation is calculated to facilitate the disarticulation of the bone; and in coming to particulars I would specify the shoulder and hip-joints, the forearm, and the leg, as cases in which this operation is decidedly preferable; but I am by no means prepared to admit its exclusive advantages in operating on the arm, and still less in operating on the thigh. These seem to me the principal points of importance in a general comparison of the two operations."

The foregoing extracts must serve to convince the disciples of Mr. Liston that the "inferiority to the method by flaps" is not so "generally acknowledged" as the *Elements of Surgery* might lead us to suppose. Mr. Guthrie's description of his method of amputating in the Peninsula bears on the subject.

"1. I did not use a tourniquet, the screwing and unscrewing of which always create some difficulty and annoyance. I never do when I have good assistants, but you must have recourse to it when alone or when they are ignorant. A very moderate and simple pressure suffices to stop the flow of blood through the largest artery.

"2. I always divide the skin and fascia by the first circular incision down to the muscles; they will then retract with very little assistance from the point of the knife at particular spots of adherence, instead of the useless and painful dissection of the skin from the fascia, which formerly took place.

"3. You will find in books that, in dividing the muscles, you are to take particular care that you cut the long and unattached ones of a different length from those which are attached to the thigh bone, and each muscle according to its power of retraction; so that they must be cut long and short, and of different lengths, something like the parts composing the compensation pendulum of a clock. I have no objection to all this; but I never saw it done, and have long since given up all thoughts of doing it myself; and why? because I have seen scores of amputations done by all sorts of hackers, hewers, and bunglers, and I invariably found that no matter how they were hacked or hewed, whether the muscles were cut according to compensation principles or not, they always made capital stumps when another rule was observed, viz., to cut the bone, that is, to have it well covered by these same muscles and integuments. It is the golden rule of amputation, and the quicker you can do everything else and come to that, the better for your patient.

"4. Saw your bone perpendicularly, and not slantingly, which prevents its splintering."—*Clinical Lectures*, p. 6.

An operation performed in the manner above described can scarcely produce a bad stump. In the thigh, the integuments being well drawn up, let a rapid circular incision be carried down to the very muscle; let another sweep (the integuments being well drawn up) be carried down to the very lowest muscles; let another sweep (with the integuments and superficial muscles well drawn up) divide the deep-seated muscles down to the bone; and then let the divided parts be well drawn up by the retractor, and the bone sawed through in the manner stated by Mr. Guthrie, and a bad stump will rarely occur. It may be advisable, in fleshy parts like the thigh, to save plenty of muscle, as recommended by Mr. Guthrie; but, according to Syme, Chelius, and others, this is of little consequence, provided sufficient integument be preserved to cover the bone. Indeed, "the perfect condition of the stump resulting from amputation at the ankle, where there is nothing but integument to protect the bone, led me to conclude," says Mr. Syme, "that, if the circular operation could be performed with the certainty of providing such a covering, it might be employed with advantage in the lower third of the thigh; which being the thinnest part of the limb, most readily admits of forming a stump composed merely of skin." If there be not sufficient muscle in a limb to cover the bone, it is of little consequence.

In amputation of the leg, some surgeons, who are in favour of the circular method in all other limbs, prefer the flap operation. But the gastrocnemius is a powerful muscle, and by its contractility may give trouble in the course of cure. "So far as my own experience proves," says Mr. South, "flap operations, in the continuity of the bone, may be performed as successfully as circular operations on every limb but the leg, in which the calf muscles are so bulky that it is often difficult to get the skin well over them, if they be left, and I do not think the cure is so quick as with the circular. But if a skin flap be made, and the muscles cut through directly, I do not think more time is gained than by the circular operation. There is, however, a more serious objection to flap operation through the calf, in the greater frequency of after-bleeding; this has occurred to me two or three times, and the number of vessels I have had to take up, and the sloughy condition of the whole flap, and

its tedious union by granulation, have almost induced me to determine never to operate on the leg but with the circular."—iii. p. 654.

In the arm and forearm, the operation by the circular incision is very rapidly performed by one sweep of the knife down to the muscles, and another sweep to the bone. In the hand and foot, the flap operation is preferable, for the best of reasons—there is no muscular tissue in the flap to interfere with the cure. It is in principle, therefore, a circular operation. Major —, volunteers, was badly wounded in the hand at Monterey, on the morning of the 24th of September, 1846, after hostilities had ceased, by the accidental discharge of his own pistol. The index and part of its metacarpal bone, and the middle finger at the joint, were taken away by the flap operation, and the patient was cured in a surprisingly short period of time. He was never admitted into hospital, but came to me every day to have the wound attended to. One reason why operations on the hand are more successful than those on the foot is, that the patient is able to take regular and gentle exercise.

There are certain cases in which amputation by the flap is preferable to the circular method, forming the exceptions to the general rule in favour of the latter. They are,

1. Amputations at joints. 2. Near the hip-joint, in the upper extremity of the thigh. 3. When the limb cannot be brought into a proper posture for performing the circular cut (*Chelius*). 4. When the destruction of the soft parts is such that by the flap operation considerable saving of the limb may be effected.

If I am not greatly mistaken, the members of the medical department of the army were in favour of the circular method of operating in Mexico. Some of the best operators in our corps amputated in this manner; and one of them, who served in the field from Corpus Christi to the surrender of the city of Mexico, and who was an advocate of the flap operation, and practised it at the beginning of the war, informs me that he changed both his opinion and practice, on the ground that the stump made by the circular operation is the best. His name would be gladly given were I at liberty to do so, but it is to be hoped that he will give the results of his experience. Whatever may be the experience of others, my own opinion is decidedly in favour of the circular method.

In the *American Journal* for October, 1848, is a communication from Dr. M. G. Delany, Surgeon U. S. Navy, in relation to Mr. Syme's practice; and I am glad to see that the medical officers of the other arm of our service have taken the subject into consideration. And I must again be permitted to recommend Mr. Syme's able paper to the further notice of the profession, especially to military surgeons. Hereafter, if the country should be so unfortunate as to become involved in war, I shall be prepared to operate, *mostly*, by the "roundabout incision."

Amputation at Joints.—Amputation in the contiguity of limbs is much praised by several writers of high authority. Baron Larrey operated several times at the joints at the battles of Eslingen and Wagram, and “experience has since taught me,” says he, “that amputation at the joints in recent injuries is more successful, *cæteris paribus*, than amputation when performed in the middle or continuity of a limb.” * * * * “Finally, I do not hesitate to assert that nine of ten cases will succeed, where amputation has been performed at the joint; while two-thirds of the same number will scarcely survive, when the operation is performed in the continuity of the limb.” This is certainly strong language, by one of the most experienced military surgeons of the age. According to Larrey’s views, amputation at the hip-joint ought to be much more successful than the operation at the upper part of the thigh, and it may be, for aught I can prove to the contrary.

M. Sedillot says that—

“Amputation at the elbow-joint was adopted, and, if we may so speak, legalized by M. Dupuytren. It is declared by M. Velpeau to be less dangerous than amputation of the arm in its continuity, but M. Sedillot justly thinks that we are not as yet possessed of a sufficient number of facts to substantiate this statement, and prefers, in all cases, removal of the arm according to the common method.”—Dr. NORRIS, in *Am. Journal*, vol. xxi. p. 437.

It is fortunate that the ball-and-socket joints are so simple in their conformation, for it is often essential to the preservation of life that amputation should be performed at the hip and shoulder. The ginglymoid joints are more complicated, and are more liable to accidents than the others, but the necessity for the operation is not so imperious, and we have an election. Instead of amputating at the ankle-joint, we may operate just above; instead of the operation at the elbow, we may amputate just above or below the joint; and it will be a long time before I would undertake an operation at the knee, notwithstanding the authority of Larrey, Syme, Dupuytren, Velpeau, and other eminent surgeons.

Amputation, primary or secondary? This question has been, and continues to be, an important one in military surgery. It is well known that M. Faure, who was an advocate for delaying the operation, received the medal of the French Royal Academy of Surgery, after the battle of Fontenoy, for his essay on the prize question—“Is it advisable to amputate immediately after gunshot wounds, or should the operation be deferred?” Afterwards, Bilguer, surgeon-in-chief of the Prussian army, and Schmucker, his successor, held the same opinion. Subsequently, John Hunter, who, on military surgery, “led to bewilder, and dazzled to blind,” came upon the stage, and by his influence and authority extended the doctrine, in a great measure, to the present day. Among the moderns who have treated of gunshot wounds, M. Malgaigne and M. Gosselin, his colleague, and Mr. Rutherford Alcock, hold to the same opinions. For M. Malgaigne’s statistics, &c., see *Am. Journ.*, vol. xvi. p. 458, Oct. 1848. M. Malgaigne’s general conclusion is that, in “attempting to preserve the limbs of the wounded, the surgeon does not cause them to

incur any greater risks than if amputation were performed." The views of Mr. Alcock are well known to the profession.

But M. Faure gave a pretty large list of exceptions to his general rule; for, where a member has been carried away, an important articulation violently fractured—the bone of an extremity shattered, with extensive destruction of soft parts, or the bones have been minutely comminuted and surrounded by a considerable contusion of the soft parts, with laceration of the tendons and aponeurosis—where the structures of the large joints are torn, and the bones are fractured, and where the main artery is lacerated and the hemorrhage cannot be controlled, it would be dangerous, in M. Faure's opinion, to defer an operation.

Baron Larrey gives the following reasons for immediate amputation on the field of battle:—

"1. The inconvenience which attends the transportation of the wounded from the field of battle to the military hospitals on badly-constructed carriages; the jarring of the wagons, &c.

"2. The danger of remaining long in the hospitals. This risk is much diminished by amputation.

"3. In case the wounded are of necessity abandoned on the field of battle."

Larrey states that, in the terrible battle with the British fleet under Lord Howe, 1794, the chief surgeon of the *Jemmape* amputated immediately, and was successful; while the surgeon of the *Temeraire* (taken by the English), by the advice of their surgeons, postponed the amputation of which many were in need, until they should arrive in port; but they all died on the passage.

"During the war in North America, in 1780, the surgeons of the French army performed a great number of amputations according to the prevailing opinion in France, that an operation should not be attempted until the primary symptoms have ceased. The Americans, on the contrary, who had the courage to amputate immediately, or within the first twenty-four hours, where their wounded required it, lost but a very small number: and yet, M. Dubor, then surgeon-major of the Artois dragoons, of whom I learned the fact, asserts that the condition of the hospital in which the wounded French were accommodated, was in many respects superior to that where the wounded Americans were placed."—*Memoirs*, vol. ii. p. 109.

Dr. Mann, Hospital Surgeon U. S. A., in the war of 1812 (*Medical Sketches*), adopting the opinions of Faure, Bilguer, and Hunter, was an advocate for delay. It is interesting to trace the apparent reasons. According to M. Dubor, the Americans were eminently successful in their operations in 1780; but they had been acquiring knowledge from 1775, at Bunker's Hill, and Long Island, in New Jersey, at Brandywine, Saratoga, &c., or they were poor scholars; and whatever their views might have been at the commencement of the war, notwithstanding the bad state of funds, and want of all things which seem essential, they succeeded much better than the French surgeons, who were influenced by the prize question, and the decision of the Royal Academy. But the French Revolution, and the tremendous wars on the continent of Europe, overturned all these notions. On the contrary, our surgeons had no experience in 1812. Our country had been in profound peace since

1783, and the dogmas of John Hunter had full sway. Hence (it is presumed) the opinions and practice of Dr. Mann, though other surgeons in our service at that time might not have been of the same opinion.

Mr. Guthrie on the same subject:—

“It is not sufficient to perform twenty amputations on the field of battle, and contrast them with as many cases of amputation done at a later period. The twenty cases for delayed operation must be selected on the field of battle, and their result compared at the end of three months with that of the others; when the value of the two modes will be duly estimated.”

Mr. Guthrie gives the following official statement of mortality:—

		Secondary.	Primary.
Upper extremities,		12	to 1
Lower “		3	to 1

“Many had wounds will never reach this secondary stage, especially in the summer season; and, if the patients outlive the first symptoms, they will not outlive the operation.”—*Gunshot Wounds*, p. 238.

The question is well stated in Druitt's *Surgery*—

“It must be recollected that the question is, not whether a hundred men just wounded, and requiring amputation, are more likely to survive it than a hundred who have gone through the ordeal of six weeks in a hospital; but whether the first hundred would live to that period; which most probably they would not.”

Larrey says:—

“If Faure still has followers, I invite them to repair to the field of battle during an engagement. They will then soon be convinced that, without primitive amputation, a great number of the wounded must die. In Egypt, this truth was most completely demonstrated.”

Mr. Hennen says:—

“Finally, the results of the field amputations, after the battle of Waterloo, confirm the published experience of both these writers (Larrey and Guthrie), and it is to be hoped that the question is now set at rest forever.”

A year or two previous to the breaking out of the war with Mexico, I listened to a lecture on this subject from a professor of surgery in one of our medical schools; and he gave his opinion, that military surgeons were disposed to look with great favour on secondary amputations. His principal authority was Mr. Rutherford Alcock. This circumstance has induced me to devote more space to the question than would otherwise have been done. I venture to say that no rule was more universally acted upon by the surgeons of our army in Mexico, from the battle of Palo Alto to the treaty of peace, than the one laid down by Hennen: “*With as little delay as possible.*” In the words of Hennen: “While hundreds are waiting for the decision of the surgeon, he will never be at a loss to select individuals who can safely and advantageously bear to be operated on as quickly as himself and his assistants can offer their aid.” This was the decided practice of every medical officer with whom I served during the war. (See *Hennen*, pp. 55, 56, 57, 58; *Guthrie*, pp. 216–232.)

Certain wounds are received on the field of battle, in which it is difficult to

decide whether amputation is the proper practice, or not. If the operation be not performed, the patient will certainly die; but reaction never comes on. A private of the fifth infantry regiment was wounded at Monterey on the morning of the 21st of September, 1846, by a shell which struck the lower part of the thigh. The shock to the system was great, and reaction did not come on; but the patient suffering great pain, we determined to amputate, hoping that he would improve after the operation. Drs. Conrad, De Leon, and myself took off the limb at the upper part of the thigh; but the operation was of no avail, and the patient died that night. These are trying cases. The instance of Gen. Daboville, related by Larrey, affords some slight encouragement for the operation under these circumstances. Perhaps the best course would be—if nearly certain that death must take place, unless the operation be performed, and we can be tolerably sure the patient will live through it—to amputate: but it is a most important question. *Occasio præceps, judicium difficile.*

Dressing of the stump after amputation.—Having alluded to sutures in the former paper, it may be well to briefly state the mode of dressing. Sutures were always employed; numerous enough to bring the edges of the wound into complete coaptation in the whole line of the incision, and adhesive straps were afterwards applied to assist the stitches by preventing too much weight from resting upon them. I have never known them produce so much irritation as to require removal before the proper period for the first dressing; and, by the time this is necessary, the wounded can be collected, and the hospitals formed, when such stitches as are not necessary may be removed. By this time, the wound may be united in its whole extent. Adhesive plaster, *per se*, was never relied upon. On no account was a stump dressed without stitches, and incised wounds of every kind were treated in the same manner. The cold water dressing, or lead water, may be employed, if considered necessary; but in very many cases nothing but perfect rest is required, with light covering to the wound, until the patient recovers. I consider stitches absolutely necessary in military surgery, on account of the frequent removals to which the wounded are subjected during and after engagements, often in wagons of the roughest kind. Indeed, I am in favour of them in almost all circumstances, the scalp always being excepted.

In regard to authority, Chelius is opposed to sutures; Mr. South thinks the surgeon may "use his own discretion;" Mr. Syme says they may be employed "if necessary;" and Mr. Liston gives the following opinion: "If such means (adhesive straps) be considered insufficient, recourse must be had to a few points of interrupted suture, and these are not productive of the bad consequences which have been by some attributed to them. When neatly applied, they can produce but little irritation, more especially if removed as soon as their presence is unnecessary; that is, as soon as adhesion has fairly commenced, and the natural bond of union is of such strength as to need no artificial assistance. By these the edges of the wound are more neatly and suitably placed than by any other; they meet easily, without the puckering or over-

lapping of each other; and from the circumstance of sutures obtaining a more just coaptation, they can be sooner discontinued. In most wounds, no other dressing is required; but in some a combination of sutures, adhesive plaster, and compress is necessary."

No one would, of course, pass stitches through the muscular substance.

The majority of French surgeons have always opposed union by the first intention. Even Larrey, during a career of more than half a century, always opposed it, but some of the modern French surgeons are in favour of the practice.

Anæsthetic Agents in Operations for Gunshot Wounds.—In our former paper, the case of Williamson was presented with some remarks in relation to the use of sulphuric ether for producing anæsthesia in operations in the General Hospital at Vera Cruz, in 1847. In the summer of that year, an amputation of the thigh was performed, the patient having been put under the influence of ether, in which the hemorrhage was almost uncontrollable. The blood spouted in all directions, and I have never seen an operation where it was necessary to secure so many bleeding vessels. Even after every small vessel that could be got at was secured, it was necessary to use cold water freely to suppress the general oozing of blood. At the time, I imputed the obstinate hemorrhage to the pernicious influence of the ether. In gunshot wounds anæsthetic agents are almost universally unnecessary, and are almost universally injurious. It was for this reason that they were entirely given up in the hospital at Vera Cruz.

It may be well questioned whether anæsthetics are not calculated to produce injurious effects in all important amputations; but they certainly do so in operations performed for gunshot wounds. M. Velpeau says: "Chloroform evidently depresses the nervous system, and as great prostration always exists in patients who have received gunshot wounds, it is advisable to refrain from any anæsthetic means."—*Ranking's Abstract*, 1848. Mr. Alecock refers to the cases of soldiers wounded in battle, where the excitement is such as to carry them through almost any operation. I regret that Mr. Alecock's paper is not before me. These are the cases spoken of by Mr. Guthrie: "Soldiers in general are anxious to undergo an operation when they find it inevitable, and frequently press it before the proper time; that is, before they have sufficiently recovered the shock of the injury."—*Gunshot Wounds*, p. 232. These are the cases which require a little more time, some "encouraging words," and perhaps a little wine or brandy and water; but no anæsthetics, for the patients are already sufficiently depressed.

There are two sets of cases; in the one (Velpeau's), the shock to the nervous system is great, from which the patient may not recover, and the use of anæsthetics would be awfully destructive; in the other class, they are unnecessary, and would prove useless and injurious. In the flap operation, they must

prove more injurious than in the circular; from the fact that muscle forms almost the entire covering for the stump; and the contractility of the muscular tissue is for a time almost annihilated, to be recovered irregularly at irregular intervals. Further, after the use of these agents wounds do not heal so readily by the first intention.

M. Jobert, on the use of ether, states that the local inflammation has proved less, and that union by the first intention has been prevented. I am able to bear testimony to the correctness of M. Jobert's statement.

I must be permitted to refer to the *Transactions of the American Medical Association* for 1851, pp. 271, 272, 315, 323. In the Massachusetts General Hospital:—

"It does not appear that the fatal results of amputation have at all diminished by the introduction of anæsthetic agents."

New York Hospital:—

"The general mortality has been for three years and a quarter forty *per centum*. As regards the method of operating, we observe that the amputations of the thigh, in which the fatality was as high as thirteen in seventeen, were all flap operations. Eleven of the leg were removed by the circular, one died; while of four by the flap, two died."

That is, nine *per cent.* in one set of cases, and fifty *per cent.* in the other.

"In almost every case chloroform or ether was employed; but, while it is admitted that anæsthetics may have had some influence in the increased mortality in the New York Hospital over preceding years, since union by the first intention was now much less frequently observed; still it is to be remembered that hospital gangrene, entirely unknown before, and purulent cachexia and erysipelas extensively prevailed there during the past three years."

Could the anæsthetics have had an influence in producing the "hospital gangrene, entirely unknown before," and the "purulent cachexia and erysipelas," as well as prevent union by the first intention?

Dr. Lente, Resident Surgeon of the New York Hospital, says:—

"In almost every case, however, either *chloroform* or *ether* was employed; generally the former until the occurrence of a fatal case from it in this hospital; afterwards the latter, from which we have never had any bad consequences, and which has never failed to prove effectual. * * * Anæsthetics came into general use about the period of the commencement of these statistics. May not the employment of these have had its influence upon the mortality? This is a very important question. We do not deny that it may have had some influence in augmenting the fatality of operations; but we have seen no reason to infer that it has, except perhaps the fact that *union by adhesion* seems to have been much less frequent since the introduction of anæsthetics into this hospital than before. Whether the two are in the relation of cause and effect, it is, we fear, impossible to determine at present."

In an unhealthy atmosphere or climate, the healing of wounds by adhesive union is doubly important for obvious reasons; and I have often regretted that etherization was so much resorted to in capital operations at Vera Cruz during a portion of 1847; nor can I avoid congratulating both the patients and myself that, before the summer had passed away, its employment was wholly abandoned. Anæsthetics poison the blood and depress the nervous system; and, in consequence, hemorrhage is much more apt to occur, and union by adhesion is prevented.

ART. II.—*Contributions to Aural Surgery.—Analysis of One Hundred and Forty Cases of Diseases of the Ear.* By EDWARD H. CLARKE, M. D., Boston, Mass.

M. ITARD, in the preface to his treatise upon diseases of the ear and audition, written thirty years ago, stated that a careful exposition and rational therapeutics of diseases of the ear were then to be written. At the close of the same paragraph, he says: "Certain vague or antiquated ideas with regard to the relaxation and tension of the membrane of the tympanum, to pretended abscesses of the ear, paralysis of the acoustic nerve, and the occlusion of the Eustachian tube, form nearly the whole theory of deafness; just as the vulgar application of blisters, the instillation of sundry insignificant liquids into the external ear, and the empirical perforation of the membrane of the tympanum, compose the entire therapeutics of these diseases."* Martell Frank, writing twenty-five years later than Itard, commences his late work upon the *Diagnosis and Treatment of Diseases of the Ear* with very similar language. "There is scarcely a specialty," he says, "of exact medical science and art upon which the attention of physicians has hitherto been less bestowed than upon diseases of the ear."† The reproaches of Itard, more than a quarter of a century ago, and of Frank, at the present day, are unfortunately too true. Of late years, however, there has been much improvement with regard to the study of aural diseases; and, consequently, with regard to their treatment. They are no longer neglected by the profession, and taken up solely by empirics. There are many careful observers, particularly in England and on the continent of Europe, who are directing their attention to the ear and its diseases; and through their labours we may hope that hereafter aural surgery will rest, or rather be built up, upon what can form the only true basis of any science, that of well-observed and carefully recorded phenomena.

It is with the hope of contributing something towards a more accurate knowledge of the diseases of the ear in this country, that the record of the following cases is offered to the attention of those who are interested in this limited, but not unimportant, branch of surgery.

The examination of all the cases which are presented in this paper was made, almost without exception, in a clear sunlight, assisted by Menière's speculum auris, and, when necessary, by the use of the Eustachian catheter and the auriscope. The latter instrument, or, as it is sometimes called, the otoscope, is of great assistance in examinations of the ear, and especially in examinations of the Eustachian tube and the cavity of the tympanum. It

* *Traité des Maladies de l'Oreille et de l'Audition*, par J. M. G. Itard, Paris, 1822, p. v.

† *Practische Anleitung zur Erkenntniss und Behandlung der Ohrenkrankheiten*, von Dr. Martell Frank, 1845, Vorrede.

frequently obviates the necessity of catheterizing the Eustachian passages, and thus facilitates an examination, both for the physician and patient. The records were made either at the time of the examination, or immediately after, and no cases are included which were not carefully recorded. No attempt has been made at a selection of cases. They are recorded as they were presented for treatment. Quite a number which might have been included in the analysis are not, on account of some imperfection in the record. Probably an equal proportion, however, of each class of diseases of the ear has been omitted. Those which are included, therefore, may be considered as representing, with a tolerable approximation to accuracy, the varieties of aural disease as they occur in New England, and the proportion of each class to the others.

The classification which I have adopted is that proposed by Kramer, and sanctioned by Menière. It is, perhaps, the most convenient for practical use of any that has been proposed; though liable to the charge of not being really scientific. According to this classification, diseases of the ear are divided into those of the external ear, of the membrana tympani, of the middle ear, and of the internal ear. The diseases of these different classes are so apt to run into each other, that it is not always an easy matter to separate them accurately in practice, and to assign to each one its proper position. This is particularly true of the first three classes; and the difficulty is increased by the fact that, in a great majority of instances, no application is made for relief until the disease has made considerable progress, and extended beyond its original seat. A careful inquiry into the history of the case, together with an accurate examination of the diseased parts, will, in most cases, however, enable the practitioner to distinguish with sufficient accuracy affections of one class from those of another. Otorrhœas, following the exanthemata, in which not only the membrana tympani is diseased, but frequently also the dermal tissue of the meatus and the cavity of the tympanum, are classified under the head of diseases of the membrana tympani. When the discharge has proceeded from the meatus, without involving the fibrous coat of the membrane of the tympanum, even if the external coat of this membrane were implicated, the disease has been classed with affections of the external ear. In this way I have endeavoured to trace every discharge to its seat, and classify it accordingly. To make a distinct class of diseases, called otorrhœas, would be to substitute a symptom for its cause. In like manner, polypous and fungoid growths are classed according to their seat, as an attendant of some other affection, and not separated into a distinct class.

One of the most practical questions with regard to diseases of the ear concerns their curability. Many persons, both within the profession and out of it, are incredulous as to the advantage of treating aural diseases. The following are the results, bearing upon this point, obtained from 140 cases:—

Table of the Curability of Diseases of the Ear.

Name of the disease.	Re- lieved.	Im- proved.	Not im- proved.	Not treated.	Total.
EXTERNAL EAR.					
Acute inflammation of the dermal tissue of the meatus	4				4
Chronic inflammation of the dermal tissue of the meatus	3	1			4
Acute inflammation of the cellular tissue of the meatus	5				5
Acute inflammation of the glandular tissue of the meatus	1				1
Chronic inflammation of the glandular tissue of the meatus	1				1
Eczema of the meatus	1				1
Accumulation of wax	16				16
MEMBRANA TYMPANI.					
Acute myringitis	7				7
Chronic myringitis, not succeeding scarlatina	5	6	3	6	20
Chronic myringitis, succeeding scarlatina	5	12		5	22
MIDDLE EAR.					
Acute catarrh of the middle ear	6				6
Chronic catarrh of the middle ear	5	4			9
Acute inflammation of the deep-seated tissues of the middle ear	2	1			3
Chronic catarrh and obstruction of the Eustachian tube		0	1		1
INTERNAL EAR.					
Nervous deafness		7	10	17	34
Probable congenital deafness				4	4
Symptomatic deafness	1			1	2
Total	62	31	14	33	140

Omitting the different varieties of each class, this table presents the following result:—

	Total No.	Re- lieved.	Im- proved.	Not im- proved.	Not treated.
Affections of the external ear	32	31	1	0	0
Affections of the membrana tympani	49	17	18	3	11
Affections of the middle ear	19	13	5	1	
Affections of the internal ear	40	1	7	10	22
Total	140	62	31	14	33

From this it appears that nearly all the diseases of the external ear, or more than 0.9, were relieved. Such favourable results were not obtained in diseases of the membrana tympani. Out of 49 cases of disease of this membrane, only 17, or about 0.35, were relieved; 18, or 0.37, were improved; and 14, or 0.28, were incurable. Diseases of the middle ear proved to be more amenable to treatment. Out of 19 cases, 13, or about 0.68, were re-

lieved; 5, or 0.26, were improved; and 1, or 0.05, were incurable. Diseases of the internal ear were the most intractable of all. Only 1 out of 40 cases, or not quite 0.03, were relieved; 7, or nearly 0.2, were improved; and 32, or 0.8, were incurable. The aggregate result is this: 62 from 140 cases of disease of the ear, or 0.44, were relieved; 31, or 0.22, were improved; and 47, or 0.33, were found to be incurable. In other words, about two-thirds of these cases were improved or relieved by treatment, and the remaining third were incurable. This result, though not so favourable as might be wished, is by no means a discouraging one. It shows that something may be done for the relief of these complaints; and, doubtless, more would be accomplished, if greater attention were bestowed upon them. Almost all the above cases of disease of the external ear proved to be susceptible of relief; next came those of the middle ear; then those of the membrana tympani; while scarcely two-tenths of those of the internal ear (nervous deafness) were even improved.

So far as the external ear, the membrana tympani, and the middle ear are concerned, this result agrees very nearly with the statistics of Kramer. It does not accord so well, however, with the results he obtained in treating diseases of the internal ear. According to his statement, out of 2000 cases, 1568, or about 0.8 (rather more than two-thirds) were either improved or relieved; while 382, or less than 0.1, were incurable.* In affections of the external ear, 276 out of 286, or 0.9, were relieved; 6 were improved; and 4 were incurable. In diseases of the membrana tympani, 72 out of 442, or nearly 0.2, were relieved; 325, or 0.7, were improved; and only 45, or 0.1, were found to be incurable. That is, nine-tenths were either relieved or improved, and only one-tenth were incurable. From my own statistics, it appears that not quite eight-tenths were relieved and improved, and rather more than two-tenths were incurable. Again, with regard to the middle ear, M. Kramer obtained a cure in 166 cases out of 198, or a proportion of more than 0.8; 16, or 0.08, were improved; and the same number were incurable. This agrees very nearly with the proportions obtained from my own much more limited number of cases. With regard to the internal ear, there is considerable disparity. Out of 1074 cases of nervous deafness, treated by M. Kramer, 54, or 0.05, were relieved; 703, or nearly 0.7 were improved; and 317, or only about 0.4 were incurable. Of the 40 cases of nervous deafness reported above, 32, or eight-tenths are given as incurable. It should be stated, however, in this connection, that I declined to treat 22 of the 40 cases at all; and but very few of the remaining 18 were treated for the length of time (three months or more) which Kramer considers necessary in order to produce any beneficial change in affections of the acoustic nerve.

One reason why diseases of the ear are so often treated unsuccessfully is the length of time which patients allow to elapse after the disease has com-

* *Traité des Maladies de l'Oreille*, par Guill. Kramer, traduit de l'Allemand par P. Menière, p. 66.

menced before it is submitted to treatment. There appears to be a great unwillingness in the community to have their ears "meddled with," as the phrase is. In many cases, weeks, and months, and years are allowed to pass by, after the hearing is affected, before any attempt is made to obtain relief. In consequence of this delay, organic changes often occur, which are irremediable, and which might have been prevented. Moreover, diseases of the ear, even affections of the meatus as well as of the membrana tympani and middle ear, and particularly those of the internal ear, are out of sight; they are not obvious, like many affections of the eye. The attention of the patient is not drawn to the ear, as being really the seat of any trouble, because he cannot see any redness or other disturbance. He may be sensible of occasional irritation, or pain, with or without tinnitus, and accompanied with more or less deafness. All this is regarded as a temporary matter, which will soon pass away; and thus the disease is allowed to go insidiously on, unchecked. If the various forms of inflammation, which attack the external auditory meatus and the membrana tympani, were as visible and as easily recognized as those which occur in the eye, the former would doubtless be as promptly attended to as the latter. The following table exhibits a striking confirmation of the above remark:—

Table of the Time elapsed before Application for Relief.

	External ear.	Membrana tympani.	Middle ear.	Internal ear.	Total.
Two weeks and less	4	5	4		13
Three to four weeks	7	3	3		13
One to twelve months	3	8	3	4	18
One to five years	2	11	4	15	32
Above five years		22	5	21	48
Unknown (accumulation of wax)					16
Total					140

From this it appears that only 13 (out of 140 individuals whose ears were diseased) applied for relief within two weeks from the supposed commencement of the attack, while 80 suffered more than a year to elapse, and 48 more than five years to elapse, before seeking medical aid. I cannot doubt that many of these cases might have been relieved if they had been treated early. A prompt attention to any disturbance in the ear is particularly important in inflammations of the membrana tympani. Acute myringitis is generally amenable to treatment, while chronic myringitis, whether resulting in thickening or in perforation of the membrane of the tympanum, is one of the most irremediable forms of aural disease.

The etiology of diseases of the ear is exceedingly obscure. Individuals, whose audition is in any way impaired, are not usually seen by competent observers until the disease is fully established. And even when the cause is well ascertained, as in otorrhœa and the like following scarlatina or the other

exanthemata, we know very little of the *modus operandi* of the cause; we do not know what the destructive processes are to which the tissues of the ear have been subjected. Thus far I have met with but very little that is satisfactory on this point. The following tables embody the few results at which I have arrived:—

Influence of Sex and Age on Diseases of the Ear.

	Male.	Female.	Under 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.
External ear	20	12	5	9	10	3	4	1
Membrana tympani	23	26	19	10	9	5	4	2
Middle ear	8	11	1	9	7	2		
Internal ear	23	17	3	4	11	12	3	7
Total	74	66	28	32	37	22	11	10

Difference of sex does not appear to exert any great influence upon diseases of the ear. There were eight more males than females, according to the above tables, whose ears were more or less affected, out of 140 cases. It is very possible that even this difference was accidental. At any rate, it is not marked enough to warrant the conclusion that the male sex are more liable than the female to these diseases. This is not the case, however, with regard to age. Infancy and childhood are especially liable to certain classes of disease; manhood and age to other varieties. Thus it appears that 14 out of 32 cases of disease of the external ear, or nearly one-half, occurred under the age of 20; and 5 of these under the age of 10. More than one-half of the affections of the membrana tympani, or 29 out of 49 cases, occurred under 20; and 19, or very nearly one-half, under 10. Again, with regard to the middle ear, 9 out of 19 occurred between the ages of 10 and 20. When we come to the internal ear, the case is reversed. Only 7 out of 40 cases of nervous deafness occurred under 20; and of these 7, 3 were probably congenital; while 22, or more than one-half of the individuals affected, were above 30 years of age, and 10 were above 40. The largest number of diseases of the external ear occurred in individuals between 10 and 20; of the membrana tympani, in those under 10; of the middle ear, in those between 10 and 20; and of the internal ear, in those from 30 to 40. The general result of these figures goes to show that infancy and childhood are peculiarly exposed to affections of the external auditory meatus and of the membrana tympani; individuals from 10 to 30 to affections of the middle ear, including, of course, the Eustachian tube, and often implicating the fauces; and that after 30 the internal ear is most frequently affected.

The following table presents a view of various other circumstances that appeared to have exerted a marked influence in causing the diseases recorded above:—

Causes of Diseases of the Ear.

Diseases of the	Succeeding								
	Cold.	Scarlatina.	Measles.	Typhoid fever.	Accident.	Epilepsy.	Hereditary.	Syphilis.	Unknown.
External ear	13	1	4						14
Membrana tympani	9	22		1	3		2	1	11
Middle ear	11		1	4	1	1	17		8
Internal ear									16
Total	33	23	5	5	4	1	19	1	49

It will be seen from this, that cold holds the most prominent place as a cause of disturbance in the ear. 33 out of 140, or 0.23 per cent. of all the above cases, followed exposure to cold. This confirms the remark of M. Kramer, that "cold, in whatever form it reaches the ear, acts in a most injurious manner upon the acoustic nerves, and upon all the constituent parts of the auditory apparatus."* The exanthemata stand next in frequency to cold as a cause of disease. In the cases which have been presented to my observation, scarlatina has been much more frequently followed by otorrhœa or some other affection, than measles. Whether a more extended observation would confirm this remark is perhaps doubtful. Of the 23 cases of aural disease which followed scarlatina, 22 are recorded under the head of disease of the membrana tympani. It is possible that, in some of these instances, the affection had its origin either in the middle ear or in the external meatus; but, as in all of them, the membrane of the tympanum was the part most seriously disorganized, they are classed under that head. Hereditary predisposition does not appear to be a very efficient cause, except in affections of the internal ear. In 17 out of 40 cases of nervous deafness, or nearly one-half, the disease seemed to be in a greater or less degree inherited. So far as these cases go, it is fair to infer that hereditary predisposition exerts a powerful influence in producing the most incurable kind of deafness, viz., that resulting from some disease of the acoustic nerve; and but very little influence in producing any other. Next to hereditary predisposition, typhoid fever is recorded as the most active agent in causing nervous deafness; or, perhaps, I should say, the most frequent antecedent to this affection. Only 4 cases, however, or not quite 0.1, were thus originated. For a large number of cases no cause could be ascertained, though careful inquiries were always instituted. We should not infer from this that in all these instances the disease originated spontaneously. Owing to forgetfulness, or lack of intelligence, or of observation on the part of the patients or their attendants, it was often impossible to ascertain the circumstances under which the affection arose. In no other organ of special sense is the commencement of disease more liable to be over-

* Op. cit., p. 27.

looked than in the ear. It appears, then, from these observations, that the following circumstances may be considered as influential causes of aural disease, viz., cold, the exanthemata, hereditary predisposition, and typhoid fever.

The duration of treatment varies considerably for the different varieties of disease. Thus, of 32 cases of disease of the external ear, 16 were accumulations of wax, and were relieved at once. Of the remaining 16, 3 were relieved after a treatment of from one to two weeks; 7 after a treatment of from two to three weeks; 4 were treated from one to two months; and the remaining 2 from two to three months. Diseases of the membrana tympani were not so readily relieved. Of 49 cases, 11 were not treated. Of the remaining 38, only 7 were treated less than a month, and these were cases of acute myringitis; 26 were treated for a period of from one to six months; and 5 from six to twelve months. It should be recollected, however, that a large proportion of these were cases of otorrhœa, whose inveteracy is well known to all who are at all acquainted with aural diseases. Of 19 cases of disease of the middle ear, of which 18 were either relieved or improved, 5 were treated from one to four weeks; 13 from one to four months; and 1 from eleven to twelve months. 40 cases are given above of diseases of the internal ear. Of these, 22 were not treated. Of the remainder, 3 were treated for less than a month only; 7, from one to two months; and 7 from two to five months. It appears from this, that affections of the external auditory meatus are relieved after a comparatively short treatment. Those of the membrana tympani, when acute in their character, are equally amenable to treatment; but, when chronic, are among the most inveterate of aural diseases. Those of the middle ear are frequently chronic in their character, and often require considerable patience, both from the practitioner and patient, in order to arrive at a satisfactory result. Lastly, affections of the internal ear, unless they are merely symptomatic of some more general affection, and, therefore, relieved when that affection is relieved, are either incurable, or, according to Kramer, require a treatment which shall continue, not for weeks, but for several months.

There are several other points of interest which we have not space to dwell upon, but which are presented by the following table. They are the condition of the ceruminous secretion in the various affections mentioned above, the absence or presence of otorrhœa, perforations of the membrana tympani, polypous and fungoid growths, complications, and the like.

Names of the disease.	Wax absent.	Do. deficient.	Do. normal.	Do. increased.	With otorrhœa.	With poly- pus or fun- gus.	Membrana tympani normal.	Do. more or less opaque.	Do. perfo- rated.	Fauces diseased.	Tonsils enlarged.	Cervical glands en- larged.
EXTERNAL EAR.												
Inflammation of dermal tissue of meatus; acute, chronic, and eczematous	3	4	2		9	3	4	1		2	2	4
Inflammation of cellular tissue of meatus; acute.	3	2			5		4					
Inflammation of glandular tissue; acute and chronic	2				2	1					1	
Accumulations of wax . .				16			16					
MEMBRANA TYMPANI.												
Myringitis; acute . . .	1	3	2	1	1			1	3	2	1	1
Myringitis; chronic . . .	8	10	2		10	5		9	11	5	7	7
Myringitis following scarlatina	7	11	4		22	6			22	6	9	6
MIDDLE EAR.												
Acute catarrh of middle ear		4	2							5	3	1
Chronic catarrh of middle ear	2	5	3							8	5	2
Inflammation of deep-seated tissues of middle ear . .	2	1			3	2		3	3	3	1	1
INTERNAL EAR.												
Nervous deafness not congenital	1	23	10				20	11		5	4	4
Nervous deafness congenital		1	3				4				2	2
Symptomatic deafness . .			2				2					
Total	29	61	30	17	52	17	50	25	39	36	35	28

The condition of the ceruminous secretion is generally considered to be of great importance as a symptom in diseases of the ear. A glance at the above table will show that the cerumen of the ear was subject to greater or less changes in all these diseases. In 16 cases of the disease of the external ear, it was increased in quantity; in 14 out of the other 16 cases, it was either deficient or absent. In 40 out of 49 cases of disease of the membrana tympani, and in 14 out of 19 of the middle ear, it was likewise either absent or deficient. Out of 40 cases of nervous deafness, the cerumen was healthy in only 15; deficient in 24; and absent in 1. Some writers have stated that an absence or deficiency of cerumen is an indication of nervous deafness. The results which are exhibited above do not confirm this statement. They rather go to show that any deficiency of cerumen is more an indication that the auditory apparatus is in some way diseased, than a symptom of any particular affection.

The above table shows conclusively the impropriety of establishing a separate class of diseases, called otorrhœa. It will be seen, by a simple inspection of the table, that a discharge from the ear accompanied inflammation of the dermal, glandular, and cellular tissues of the meatus of the membrana tympani, and even of the middle ear. In fact, a running from the ear, as it is popularly termed, is a circumstance of frequent occurrence in diseases that are essentially different; as different as simple inflammation of the dermal tissue of the meatus, chronic inflammation of the membrane of the tym-

panum, and acute inflammation of the deep-seated tissues of the cavity of that membrane.

Fungoid growths, polypus, and the like, seem, like otorrhœa, to be associated with very different affections. It would be interesting to examine their different varieties, manner of growth, position in different parts of the meatus, and other circumstances; but the extent which this paper has already reached forbids such an investigation. It appears that 17 instances of such growths occurred in 140 cases of disease of the ear; and 15 out of the 17 instances accompanied affections of the external auditory meatus and of the membrana tympani.

One of the most frequent and unfortunate results of inflammation of the membrana tympani is perforation of that membrane. This occurred in 36 out of 49 cases, presented above. Three of them followed acute, and the remainder chronic myringitis. The same membrane was also perforated in the three instances which are given of inflammation of the cellular tissue of the middle ear, or, as it is sometimes called, internal otitis. The three instances of perforation with acute myringitis were healed, and the membrane restored to its normal condition. The same took place in two out of the three cases of inflammation of the middle ear. There are 33 cases presented of perforation occurring with chronic myringitis. In only two of these was the perforation healed; and in that form of myringitis following scarlatina no instance of restoration of the membrane occurred. In many of these instances, there can be no doubt that a neglect of proper treatment—an unwillingness on the part of the patient, or the patient's friends, to have the discharge interfered with—contributed very considerably to this unfortunate result. Opacity of the membrana tympani is another and a not unfrequent result of chronic myringitis. When it is produced by the deposition of lymph between the layers of the membrane, it is almost irremediable. The record shows 20 cases of this variety of inflammation not resulting from scarlatina. In 9 of these cases, that is, nearly in one-half of them, opacity occurred to a greater or less degree. In 26 cases of nervous deafness, the membrane of the tympanum preserved its normal appearance; in 14 cases, it is stated to have been more or less opaque. The opacity, however, in these cases had not the milky appearance, resembling the conjunctiva, which is seen in chronic myringitis, but was rather a dulness—an apparent want of vitality in the membrane, a dead look—than actual opacity.

Inflammation of the fauces and the neighbouring parts is a frequent complication of diseases of the ear. It appears above that 36 instances of this complication existed in 140 cases. In other words, we may infer that in more than one-fourth of the diseases of the ear, occurring in New England, some affection of the fauces or nasal passages probably exists. Indeed, the frequent occurrence of deafness with colds is a matter of ordinary observation. In 35 cases, the fauces were not only diseased, but the tonsils were enlarged.

A strumous diathesis has often been insisted upon by aurists, and especially by Schmalz, as a predisposing cause to disease of the ear. So far as it is proper to generalize from 140 cases, the statistics we have given go to confirm this notion. For it appears from the preceding table that, in 35 out of the 140 cases—that is, in 25 per cent. of them—there were enlarged cervical glands as well as enlarged tonsils. And it should be noticed that enlargement of the tonsils and glands of the neck occurred more frequently with affections of the middle ear and membrana tympani than with any other class.

We have now completed this analysis, so far as our limits will allow. We have omitted several points to which we should have been glad to direct attention, and dwelt, perhaps, too briefly upon others. It was our intention to add something upon the course of treatment which was pursued in the cases which have been presented; but we do not feel that it is proper, at the present time, to trespass farther upon the patience of our readers.

ART. III.—*Report of Twenty-five Cases of Urinary Calculus, in Twenty-three of which the Bi-lateral Operation was performed.* By PAUL F. EVE, M. D., Professor of Surgery in the Nashville University, Tennessee.

AMONG the committees appointed at the last meeting of the American Medical Association, was one to collect the statistics of the operation for the removal of stone in the bladder. In October, 1841, I first performed lithotomy; since then, a period of eleven and a half years, I have operated upon twenty-four cases of urinary calculus; nine of them within twelve months, four in Georgia and five in Tennessee. No one will doubt the importance of carefully prepared surgical statistics; and to make mine the more full and authentic, the valuable assistance of Prof. Means and Dr. Barry in the chemical analysis, and of Dr. Juriah Harris with the microscope, has been invoked in the examination of my collection of vesical stones, amounting to about one hundred and forty. In the analytical investigation, all proposed was simply the qualitative and not the quantitative composition of these foreign bodies.

The cases are now narrated in the order of their occurrence:—

CASE I.—A mulatto boy, eight years old, coming from Lincoln County, Georgia, has had symptoms of stone for some indefinite period. The bi-lateral operation was performed on him in October, 1841, after the method of Dupuytren, with the double lithotome caché. A mulberry calculus, weighing two drachms, was extracted. This is the handsomest specimen of the oxalate of lime formation in my collection. The mulberry-like granulations are small, distinct, and perfect. The wound healed so kindly that on the fourth day after the operation, the patient was considered well; in fact, was out of his room.

This is believed to have been the first time lithotomy was performed in Augusta. So late as 1845, this operation had never been required in Savannah, and had not then been performed a dozen times even in Charleston. Up to the present time, I believe I have cut for stone oftener than all the professional gentlemen that ever lived in these three great southern cities, Augusta, Savannah, and Charleston; so unfrequent are calculous cases in this section of our country.

CASE II.—Master H—— was six years old, resided in Baldwin County, Georgia. Irregularity in urinating was observed at twelve months of age, and attributed by his mother to a needle introduced into the urethra, which she thought had passed into the bladder. The bi-lateral operation was performed in May, 1843, and a large stone removed. It was light compared to its size, weighed about four drachms, and is the ammoniaco-magnesian phosphate. This patient had a speedy recovery, having been up and about the room on the fifth day after the operation.

CASE III.—A mulatto boy named Lewis, three years old, labouring under symptoms of stone for several months, was cut with the double lithotome in June, 1843. A calculus of the mulberry variety, weighing a drachm and a half, was extracted. This patient sat up on the fourth, and was well on the eighth day after the operation.

From inquiry specially directed to the subject at the time, this is supposed to be the second case of stone known to have originated in Augusta. The first was taken to New York, several years ago, and operated upon by Dr. Mott.

CASE IV.—This patient, aged three years, who also resided in this city, was the son of Mr. S——. He was operated upon in October, 1845, by the bi-lateral method; a calculus, measuring two and three-quarters inches in its longitudinal circumference, was removed; and the patient had a speedy recovery. The composition of the deposit in this case is the ammoniaco-magnesian phosphate. There was some hemorrhage during the operation, but fortunately no recurrence after it.

CASE V.—In this instance the stone was removed by crushing during the months of November and December, 1845. Mr. L——, aged thirty-four, came from Early County, Georgia. The calculus measured in diameter over an inch, and was broken up in eighteen sittings by Charrière's make of Heurteloup's instrument. The patient was not confined even to his room during the treatment, suffered no acute pain, passed no blood, and up to the present date continues well. A fragment which seemed to be the outer layer of the calculus, yielded to chemical reagents, phosphate of lime; but from the resistance offered the lithotriptor, and the physical appearance of other pieces passed *per urethram*, I am inclined to think the central mass to have been the oxalate.

The account of this case, with a notice of the operation of lithotrity and lithotripsy performed in the United States, was published in the *Southern Medical and Surgical Journal* for February, 1846.

CASE VI.—A negro woman, aged twenty-four, married and has borne one child, came from Alabama, and was cut in January, 1846. The calculous formation in this case was evidently the result of an injury to the bladder. Four years before her arrival here, she fell astride a projecting bar, and sustained, no doubt, a fracture of the pelvis. There was great contusion of the external organs of generation; the patient was confined six months to bed, unable to walk; and for a year could not labour. Great difficulty was experienced in micturition, little urine could be retained, and for four months the catamenia had failed. An inch and a half behind the orifice of the urethra, a small object was felt projecting into the vagina, and the sound instantly detected a foreign body in the bladder, apparently filling it.

A vesico-vaginal fistula already existing, in operating, the urethra was laid open to it, and a piece of bone, coated with uric acid, was removed. This was the foreign body which had ulcerated through the bladder into the vagina; was of an irregular shape, and about three-fourths of an inch square. A large, soft, calculous mass felt in the bladder was now scooped out, and then its nucleus, another and larger piece of bone, was seized, but could only be extracted after a second incision made in the soft parts towards the clitoris, and by repeated efforts. Nor was the bladder even yet emptied of foreign matter, for during the treatment, a calculous mass, weighing forty-five grains, was passed through the wound.

The duration of this operation was about an hour, and left the patient quite exhausted. Incontinence of urine, so much to be apprehended after lithotomy in the female, was certainly expected. This, however, she has not only escaped, but has been restored a useful servant to her owner.

The composition of the calculus was uric acid; the nuclei, when sawed in two, presented the cancellated structure of bone, and were reduced by reagents to animal matter and phosphate of lime.

Remarks.—In reference to the result of incontinence of urine after lithotomy in women, we think a difference will be observed dependent upon the age of the patient. In children this deplorable event will, we think, be found pretty uniformly to follow the operation, while the adult female may escape. This is just what might be expected from the relative development of the organs interested in its performance. We have received the particulars of a case in which the urethra and vagina were freely incised in childhood; this patient lived to become a young lady, but was ever an object of disgust to herself and of pity to her friends; death happily relieved her condition, made worse by lithotomy. One of our pupils, Dr. Groce, of Alabama, has published the case of a married lady, in which he cut immediately upon the stone through the vagina and urethra, and after removing it, was, to his great surprise, on being summoned to the same patient, eight days afterwards, called upon to re-open the wound for the purpose of extracting a second calculus; and yet she fully recovered, bore a child, and enjoyed unusual health. And in the case suggesting these remarks, the recovery has been equally good, notwithstanding the free incisions made into the soft parts under very unfavourable circumstances.

CASE VII.—Dr. R——, when about twenty years old, and living then in Henry County, Georgia, was relieved by lithotomy, in April, 1847. He had

laboured under symptoms of stone for several years. The operation was the bi-lateral. The patient refused to inhale ether or to submit to the continuance of the operation after it was commenced. It was nevertheless performed, and a small oxalate of lime calculus extracted, weighing only forty-seven grains. The urine resumed its natural course on the eleventh day after the operation, and the patient soon fully recovered. He is now a worthy member of the profession.

Besides operating in this case against the will of the patient, there was another peculiarity. Sounding just preceding its performance by several present, did not reveal the presence of the stone. Having gone the distance of about a hundred and fifty miles, and being confident I had recognized its presence in the bladder a week before, I ventured under the circumstances to attempt its removal, and fortunately succeeded, notwithstanding its very diminutive size.

CASE VIII.—This, too, was a patient twenty years old, having had symptoms of stone from his early youth. Mr. C—— lived in De Kalb County, Georgia, and was cut with the double lithotome in October, 1847. A large mulberry calculus, weighing over an ounce, was broken into two pieces in its extraction. Its outer layer is phosphate of lime. The patient had a speedy recovery.

I have performed lithotomy seventeen times within the past four years upon patients under the influence of chloroform; in none did it exercise other than good effects. I may have been the first to operate for stone in the United States upon a patient under this anæsthetic agent. In all the following cases, *chloroform* was alone used, and this *bi-lateral* operation performed.

CASE IX.—Master G——, five years old, has suffered symptoms of calculus for the past four years. He resides in Edgefield District, South Carolina, and was operated upon in March, 1848. The urine commenced to flow naturally on the second day after the operation, the wound healed rapidly, and the boy was well in a few days. The size of the stone accurately measured is one and a quarter inches and fifteen-sixteenths of an inch in its diameters, but it is light, weighing only three drachms. It is the ammoniaco-magnesian phosphate.

CASE X.—Master P——, a boy five and a half years old, came from the same neighbourhood of the one above, and was cut in May, 1848. He was a seven months' child; his mother during gestation had been ill with fever; he was altogether quite puny for his age. Difficult urination occurred from infancy. A calculus, composed as the one above, in weight two drachms and four grains, was removed. On the ninth day the urine resumed altogether its natural channel, and the patient was out in the streets in less than two weeks.

CASE XI.—This is the most interesting and satisfactory of all my cases. One hundred and seventeen calculi were taken from this patient. Mr. O'Bannon, then about fifty years old, lived in South Carolina; had been injured twenty-four years and four months before being operated upon, by a piece of timber striking his spine; soon after this, he experienced

difficulty in urinating, which continued until relieved in January, 1849. Presenting a crepitating tumour in the perineum, which projected more to the right side than the left, and detecting by the sound, stone in the bladder, this case was operated upon before the class of the Medical College of Georgia, at the date just mentioned. An incision was made as in performing the lateral operation for lithotomy, except that it was made to the right, and not to the left of the raphe of the perineum, and fifty-six small calculi extracted through this opening. The grooved staff now introduced into the bladder coming in contact with other foreign bodies in this cavity, the double lithotome for the bilateral section was used, and then sixty-one more stones removed from it with the forceps; making the whole number *one hundred and seventeen*. The largest of these weighed two drachms thirty-eight grains; the two next in size, seventy-eight grains each; and the smallest, one grain; aggregate weight four and a half ounces. They are of a tetrahedral shape, have polished surfaces, are easily fractured, are of a grayish-white colour, and composed of phosphate of lime.

Notwithstanding this patient was reduced almost to skin and bones by his long suffering, he yet had an excellent recovery. He sat up a little by the fire on the second day after the operation, changed his room on the fourth day, on the eleventh was out in the yard of the hospital, and by gentle pressure upon the wound passed all his urine through the urethra. On the eighteenth day from the operation he returned home, a distance of twenty-two miles. Upon inquiry, I am happy to learn he still continues well.

Remarks.—It will be recollected that the largest urinary calculus in the British collection was taken, after death (the operation attempted by Cline proving fatal), from Admiral Sir Walter Ogilvie, who was struck in his back by the boom of a vessel when he was twenty-three years old. An injury to the spine, like in my case, seems to have been the cause of its production. This stone weighed forty-four ounces, and measured sixteen and fourteen inches around its axis.

CASE XII.—This was a negro boy coming also from South Carolina, aged six years. Lithotomy was performed upon him before the class of the Medical College of Georgia in February, 1849. The calculus was broken in the effort at extraction. It weighed about two drachms. Its composition is uric acid. This patient returned home within two weeks.

CASE XIII.—In May, 1849, I cut twice for stone. The first case was in Twiggs County, Georgia, and was upon the son of General T——, aged four years. A calculus, weighing about a drachm, of the mulberry variety, was removed from his bladder. During the operation in this case, the rectum was punctured, so that gaseous and fluid contents passed through the section made in the perineum, but none of the solid feces. As chloroform does not prevent the protrusion of this organ while performing lithotomy, I have made a modification in the division of the soft parts by the knife to obviate this accident. This will be described at the close of this article. The puncture of the rectum in this instance was, however, so slight, that the patient was dismissed well on the eleventh day after the operation.

CASE XIV.—The other case operated upon, during this month and year, was in Coweta County, Georgia, and the patient a lad aged ten years. Master B—— was from infancy a sufferer with symptoms of stone. The calculus re-

moved is the largest in my collection. It weighed three ounces and one drachm, measuring six inches in one and seven and three-quarters in its longest circumference. It may be the largest ever removed at so early an age. Its composition is ammoniaco-magnesian phosphate; but the centre of it was not examined.

The wound in this instance had nearly healed, the patient had suffered nothing special in the region of the bladder, when unfortunately an attack of dysentery, then becoming prevalent in his neighbourhood, destroyed his life. His attending physician wrote me that his death was not attributed to the operation; and again he writes, March 30, 1852: "I made no post-mortem examination of young B——; I have no doubt, however, that his death was produced by the affection of his bowels."

CASE XV.—In this case lithotomy was performed, but no stone removed. The patient was twelve years old, son of Mr. Z——, of Morgan county, Georgia, and in addition to symptoms of calculus laboured under congenital contraction of the orifice of the urethra. This opening was so small that he had frequent retentions of urine. In June, 1850, in the presence of several professional friends, the orifice of the urethra was enlarged; the sound then introduced into the bladder coming in contact with a foreign body, the bilateral section was made. Owing, I presume, to continued distension having dilated this organ, it could not be explored with the finger; still, a calculus could be reached, but not seized with instruments. I believe others present were as fully satisfied of this as myself, and suspecting the stone to be encysted, the case was at this stage of the operation abandoned to nature.

The wound healed kindly, and in a few days the patient returned home. I have several times since, and again more recently endeavoured to obtain the subsequent history of this case. On March 29th of this year, I learned from a physician related to the family of Mr. Z——, "that the operation was of some temporary benefit. The improvement, however, continued only a few weeks, and the lad is now precisely in the same condition as before it was performed"—that is, he has symptoms of stone.

Remarks.—A good deal has been said and some little written in reference to the fact of cutting into the bladder when no stone existed in the case, or could not then be found. The possibility of this occurring, and without censure to the surgeon, must be admitted, however unpleasant the circumstance would be to any one. Within the past six months, in a case of retention of urine, I was fully confident that the catheter revealed a foreign body in the bladder, but which had not been suspected by three other professional gentlemen. In a few days, this patient passed the large gravel now in my possession. Agreeable to the principles of surgery, lithotomy might have been a justifiable operation at the time I was called into this case; but there is little doubt this small calculous body would have escaped detection by the finger or forceps introduced into the bladder through a section made into it.

Who, need we ask, has not failed to detect stone in the bladder when one existed at the very time of the examination; or who has not been deceived in the sensation imparted by the sound? Even with the free, full, and unbiassed exercise of all the senses, how fearful are we of committing errors in diagnosis in reference to affections less obscure than those of the bladder? In detect-

ing urinary calculi, we are unfortunately limited to two of the perceptive faculties; hence the great liability to mistakes. The distinguished Samuel Cooper, long at the head of surgical literature in Great Britain, declares he knew of at least seven cases, at two of which he was present, where the patients were subjected to lithotomy, and no calculi found in their bladders.

The greater Cooper, Sir Astley, says he has failed to detect anything when others have discovered a calculus. He cut one patient and extracted thirty-seven stones from his bladder, though he had been sounded and declared not to have one. In a case in which the urine had been repeatedly drawn off, and no stone could be felt after the patient's death, fifty-six, he states, were found in the bladder.

But still more to the point resembling my own case. This celebrated surgeon cut a boy in Guy's Hospital, wherein he supposed the sac of the encysted stone was alone opened, situated as it was between the bladder and rectum, and without wounding either of these organs. This patient recovered. In another case, he found by inspection after death two calculi having large extremities connected by a narrow stem; one extremity of each was situated in a sac, and the other extremity in the cavity of the bladder.

Sir Benjamin Brodie relates a case in which the patient only occasionally suffered symptoms of stone. Dying of pleurisy, a perfectly formed cyst was found embracing the calculus; but in such a manner that he suspected this foreign body to have escaped into the general cavity of the bladder only at the periods when he actually experienced the symptoms of cystic irritation.

A curious case is mentioned in a recent journal, in which, at a consultation, I think, of about fifteen surgeons, the question of the presence of stone in the bladder was decided in the affirmative by one vote, and the operation of lithotomy performed. No calculus was found; the patient, an adult, was cured, nevertheless, of all his symptoms, but never once asked to see the foreign body supposed to have been extracted.

Cheselden cut thrice, and found no stone. Roux, the present veteran surgeon of the Hôtel Dieu, has performed lithotomy four times without finding a calculus. Dupuytren acknowledged having done this once; and Dr. Physick was very near doing the same thing. He had no doubt the stone existed, but would not operate because the health of the patient was bad. He died before the preparation for it was completed, and on examination nothing foreign was found in his bladder. Crosse, the celebrated lithotomist of Norwich, England, admits he cut in one instance a child affected with polypus, and not stone of the bladder; and says, he has notes of not less than eight cases in which surgeons expected to find calculi without doing so. Desault has also committed this error.

Professor Ford of this city sent a case to me, in 1849, which was quite similar to the one which has drawn forth these remarks. It was a boy about eighteen months old, whose almost closed orifice of the urethra I enlarged, when a copious gush of urine relieved the distended bladder. Not suspecting

he had symptoms of urinary calculus, he was not sounded. A short time afterwards, he was killed by the shaft of a dray falling upon his head, when all that his parents would permit Dr. F. to do was to feel the stone by the catheter, which, he says, was unequivocal.

A case of sacculated or encysted calculus is published in the *Monthly Journal of Great Britain* for February, 1848, by Prof. James Miller, of Edinburgh. He says: "Again using the forceps, sometimes as a sound and sometimes as forceps, I could make no seizure; often coming in contact with the stone, but never being able to include it in my grasp. I changed the forceps once and again, using different sizes and forms; but with a like want of success." He then requested his friend and colleague, Dr. Duncan, to take his place; but he likewise failed to remove the calculus. This they could feel but not seize, and became satisfied it was firmly grasped and protected by the bladder; either sacculated or encysted, they could not tell which; for it was far from the point of the finger, and could be reached only by the instruments introduced. By repeated efforts, the stone was extracted, but the patient died.

I agree with M. Civiale that an examination with lithotripsy instruments tends greatly to correct the diagnosis of ordinary sounding the bladder and the exploration by the finger in the rectum.

CASE XVI.—In October, 1850, just before leaving for Louisville, Kentucky, I operated for stone at Midway, near Milledgeville, Georgia, on the son of Mrs. H., aged seven, who had presented evidences of urinary calculus from early childhood. A very rough fusible calculus, the triple phosphate of ammonia, magnesia, and lime, was removed, in weight about half an ounce. In ten days after this, the patient was well.

CASE XVII.—Master S., the son of German parents, who settled first in Charleston, South Carolina, where he was born and resided until a year ago. He was sounded in that city, but nothing special elicited. Having returned early in February, 1851, from the West, lithotomy was performed on this patient before several members of the class then in attendance at the Medical College of Georgia. A mulberry calculus weighing about half a drachm was extracted, and the boy returned home to Graniteville, in his State, in a week.

CASE XVIII.—In March, 1851, I operated upon Master J., seven years old, coming from Elbert County, Georgia. His mother states explicitly that, when only four days old, she noticed he suffered during micturition. A calculus of uric acid, three drachms in weight, was taken from this patient. Hemorrhage occurred during the night after the operation, but was arrested by a female catheter having a linen pocket attached to it, and stuffed with cotton after its introduction through the wound into the bladder. The patient left for home within two weeks.

Remarks.—The calculus in this case was in all probability congenital. The earliest period of life at which we find lithotomy was required is mentioned by Civiale as occurring at ten weeks old. The result of the operation is not given.

CASE XIX.—The son of a professional brother, Dr. S., in Coweta County, Georgia, was cut in June, 1851. He was seven years old, had two friable calculi, one of which was removed nearly whole, the other after it was broken up. They would weigh about three drachms, and are composed of oxalate of lime nuclei covered with about one-eighth of an inch of phosphate of lime. I have just received a letter in which occurs the sentence: "The condition of Dr. S.'s son is such as you would desire it to be, a perfect cure."

CASE XX.—Up to this number, but one of my patients had died after being operated upon; all had fully recovered with a single exception, and death in that instance was not attributed to lithotomy. But of my remaining cases, that is, of the last six operations, no less than three had a fatal termination.

The first of these was in the person of Mr. T., of De Kalb County, Georgia, aged seventy-seven. He had been afflicted for years with calculous symptoms; for the last ten had daily used a catheter; knew he had a stone in the bladder, for, besides feeling it with his silver catheter, its eyes or openings near the beak would occasionally be plugged with fragments of a urinary concretion; and, having endured the extreme of human suffering, now demanded, at all hazards, an operation. The usual bilateral section was made, but, owing to the size of the prostate gland, the bladder could not be explored with the finger. As in Case XV., a foreign body could only be felt, but not seized with instruments. After repeated efforts, the fragment of a calculus, size of a rifle-ball, was detached by the scoop; the operation was now discontinued, and the old gentleman died at the end of sixty hours, of course from the direct effects of it.

His family physician, Dr. E. N. Calhoun, fortunately made a *post-mortem* examination, and thus describes the condition of the organ opened in the operation: "After cutting into it (as in the high method for stone), I found the walls of the bladder thickened to the extent of from one-fourth to three-eighths of an inch, and perfectly infiltrated with blood. It contained a large quantity of bloody water, of course very offensive, and there were *three distinct cysts*, each containing quite a number of small calculi. The one sent" (about the size of a partridge's egg) "I took from the sac nearest the fundus."

CASE XXI.—This was my first in Tennessee, and was operated upon in November, 1851. Mr. T., aged twenty-four, had suffered calculous symptoms for years, and had recently returned from a visit to California by the Isthmus. He was cut in the presence of several members of the medical class of the Nashville University, and a very rough mulberry calculus, weighing about half an ounce, removed. In physical appearance, it resembles very much the one removed thirteen months before, near Milledgeville in this State, but differing widely from it in composition.

The bleeding was rather free after the operation; but a careful examination did not expose any particular vessel from which it proceeded; the blood seemed to be derived from the plexus about the neck of the bladder. It soon ceased to return during the night after the expulsion of a coagulum, when it was permanently arrested, as in Case XVIII., by a female catheter, armed with a linen pocket and stuffed with lint.

This patient was ready for home in less than two weeks.

CASE XXII.—On the 10th of December, 1851, I removed, in Nashville, a calculus from the daughter of Dr. D., of Tennessee, on her fifth birthday. The double lithotome introduced into the bladder touched the foreign body;

it was turned half round, as in operating upon the male; the blades expanded, and in withdrawing the instrument as soon as the cutting edges appeared at the mouth of the urethra, these were closed. The object of this peculiar method was to divide the orifice of the urethra to as limited an extent as was possible for the extraction of the stone. Dilatation was now effected, and a calculus measuring nearly three inches in its greatest circumference was removed. Its composition is oxalate of lime.

In thirty-six hours after the operation, the patient was apparently well; the second night, she retained her urine, rising twice to evacuate it; and, on the fifth day, she left the city for home in an open buggy, with the temperature below the freezing point. I learn, subsequently to this, her perfect recovery.

Remarks.—This little girl lived for three years in a calcareous region, where the ordinary drink was strongly impregnated with lime; after this, she used free-stone water, but had an attack of genuine variola, and, during convalescence from it, experienced an inordinate thirst for acids, which was freely indulged by allowing her pickles, crab apple cider, &c. She now presented, for the first time, symptoms of urinary calculus. It may be that the alkali and acid, thus introduced into the system, stand in the relation of cause and effect as regards the production of stone in this instance.

CASE XXIII.—A boy, seven years old, son of Mr. G., was brought before the class of the Nashville University, through the kindness of a professional brother, for diagnosis in regard to a vesical affection. He had been sounded without detecting stone; now, one was recognized. He was cut on the 5th of February, 1852, and an oblong calculus, weighing about a drachm and a-half, removed. It is of a dirty-yellowish colour, and oxalate of lime composition.

The wound healed by the first intention. The attending family physician and myself made daily examinations of it, and to our repeated inquiry of the mother who nursed the patient, she gave the invariable answer, there has been no discharge from the cut in the perineum. The boy sat up in three days after the operation; took one dose of opening medicine, in a week was running about, and presented again to the class sound and well.

CASE XXIV.—During the same month (February), lithotomy was again performed before the class of the University. This patient was aged twenty-four, and was apparently suffering the extreme of human endurance with stone in the bladder. He decided for an operation because a neighbour labouring under the same affection had just died, and from whose bladder, after death, a large calculus was taken. So urgent were the symptoms in the present case that every preparation was hastened for relief. The warm bath, demulcent drinks, opiates, &c., were prescribed with little avail, for, on the night previous to the operation, he soiled the floor of his chamber with some six or eight small puddles of urine which he had spasmodically passed lying upon his abdomen.

When brought before the students on the morning of the 16th, they were told how unfavourable was the case for operating, yet how urgent the demand for it. Waiving every other consideration but the relief of the patient, the bilateral section was made into the bladder, but, owing to three circumstances, the operation was protracted for nearly an hour. We have the candour to

admit, it was badly performed. Chloroform did not act favourably; the opening in the prostate was not large enough for so voluminous a calculus; and having had my own forceps misplaced, and using too small a pair, the stone was crushed by the efforts at extraction. It is composed of phosphate of lime.

The patient gave hopes of doing well up to the third day, when, unfortunately, erysipelas invaded the whole scrotum, terminating in mortification, and his death on the sixth day after the operation. I was in the country, engaged with another case of lithotomy, when he died, and no *post-mortem* was made of the body.

CASE XXV.—During my winter sojourn at Nashville, I had several times been consulted by the friends of Colonel K., who was quite a sufferer from urinary calculus. He was a large, fleshy man, weighing over two hundred pounds; of excellent constitution; good health, previous to the present affection; of most exemplary habits; and I found him, the last of February (this year), urgent for an operation, to which he had been brought, as the last resource, for relief. The past summer, this patient thought he was deriving benefit from a newly-discovered spring in Tennessee, and was induced to believe the water was even dissolving the stone, as he passed several considerable fragments, seemingly the layers or concentric laminæ of a larger mass. At the time of the operation, he had been confined not only to his room, but even to his bed, for several months. He had been out but once since October, and then only on account of an alarm that his house was on fire.

Colonel K. was now sixty-five years old; had experienced his present symptoms four or five years; been passing fragments of a urinary concretion for eight or nine months; and resorted constantly to the catheter to relieve retention. Notwithstanding his emaciation from intense suffering, he still presented a stout frame in a good constitution, and enjoyed a firm reliance in the Christian's hope. With the full understanding, on his part, that his case was an unfavourable one for operating; that we knew the stone was already broken up; that he was greatly reduced in strength and body, and yet was quite fat; that the season of the year was unpropitious; and that, in the consultation of his five physicians, it was decided the prospects for life and death were equally balanced, lithotomy was performed. Such a prostate gland I hope never again to encounter. The bilateral section was, however, fairly made, but, from the size of this body, it was impossible to pass the finger beyond it, much less explore the bladder. With the scoop and forceps, several pieces, one much larger than the others, apparently the nucleus, of a considerable mass, were extracted. It is the triple phosphate.

The following extract from a letter of the patient's family physician gives the subsequent history of this case:—

“ Lebanon, Tennessee, April 1, 1852.

“I remained with Colonel K. twenty-four hours after the operation, and everything seemed to promise well. He slept well, and passed his urine both through the wound and urethra. I left him full of hope that my much valued friend would recover and enjoy many years of health. I did not return to see him until the ninth day after the operation; but how changed his condition! * * * The wound was gangrenous; there was also a slough as large as a dollar on one of his nates, and another at the verge of the anus. He lingered till Tuesday morning.”

Remarks.—This patient, too, in all probability fell a victim to erysipelas;

at least we are left to infer as much. I believe, under the circumstances, I did my duty in operating in this case. He could not well have been brought to Nashville. Were it not for the immense size of the prostate gland, judged to be two and a-half inches in length by an inch thick, and his distance from the conveniences of a city, possibly lithotrity might have relieved him.

In reference to the cause of breaking the stone while in the bladder, we know of no better explanation than that offered in the following quotation from Mr. South. He says, Sir Benjamin Brodie gives the history of a case, in which the patient, "having, for a considerable time, laboured under the symptoms of stone in the bladder, began to void by the urethra what had all the appearance of portions of a large calculus, broken down into fragments of various shapes and sizes. The number of these fragments at last amounted to more than two hundred, and now the discharge ceased, the symptoms at the same time subsided, and the patient being restored to perfect health. In this instance, the discharge of the fragments of the calculus was attributed to the use of certain mineral waters." Prout mentions a case, in which, however, the same happened without the patient using mineral waters or any kind of medicine; and Crosse speaks of numerous fragments which he obtained from a gentleman after a ride on horseback; as well as of twenty-two calculi removed after death, from a patient seventy years of age, which are of a very irregular shape, but admit of being so arranged as to form four regular and well-shaped calculi, each of the size of a pigeon's egg, which, with the appearances of the different surfaces, proves that the calculi had been broken in the bladder by knocking against each other under certain movements of the body. Other cases are also alluded to, and in the Museum of the Royal College of Surgeons there are several similar broken stones.

In my case it is more probable that the rough ride to the spring had more to do in breaking up the stone than drinking its waters had in its dissolution.

Recapitulation of the twenty-five Cases.

Sex.—23 were males, and 2 females.

Race.—2 were black, 2 mulattoes, and 21 white.

Age.—16 were under thirteen years, 7 between twenty and thirty-five, 1 at sixty-five, and 1 at seventy-seven.

Operation.—24 were cut, 23 of which by the double lithotome.

Result.—4 died after being operated upon, 3 of which from the operation, 2 indirectly (supervention of erysipelas), and only 1 directly from it. The remaining 21 fully recovered. Of the 19 first operated upon, but 1 died; and in that instance, death was not owing to lithotomy. 17 were well in two weeks after the bilateral operation. In no case have I heard of the reproduction of stone, nor has a fistula occurred in one.

Number of Calculi and their Chemical Constituents.—Single in twenty-two cases, 2 in one case, 3 in another, and 117 in another; total, 144 stones in

the twenty-five cases. Composition, chiefly some preparation of lime. There is not the usual proportion of the uric acid formation. Of the five specimens obtained in Tennessee, each contained lime; thus confirming Prof. Peters' analysis of the Dudlean collection of calculus at Lexington, Kentucky. It would seem from this collection that phosphate of lime is not so rare a composition of urinary concretions as is generally supposed.

My method of performing lithotomy is now submitted, but claiming for it nothing original.

It will be seen that decided preference is given to the bilateral operation of the late distinguished French surgeon, Dupuytren. I have found that, owing to the irregularity of the external surface operated upon, it was difficult to make the crescent-like shape or the semicircular incision through the skin and soft parts. I now make the cut like a **A**, with a short tail. The grooved staff previously introduced into the bladder, and the scrotum elevated by an assistant, a short incision is made directly upon the raphe of the perineum at the bulb of the urethra, and the direction changed at a very oblique angle at the end of about three-quarters of an inch, to terminate at a point midway between the anus and left tuberosity of the ischium. With the edge of the knife now turned upwards, it is made to penetrate and commence the other leg of the **A** at the point of the right side corresponding to the one just terminated upon the left. This incision is deepened as the instrument ascends, and, arriving at the middle of the perineum with the edge turned directly upwards, the urethra is opened, and the groove of the staff exposed. This not only simplifies the external incision of lithotomy, but effectually guards against the liability to wound the rectum. The operation is then completed in the usual way.

The suggestions made in the *Southern Medical and Surgical Journal*, in 1849, in regard to the instruments, I expect to have carried out this summer while in Paris; and they may hereafter be presented to the profession.

AUGUSTA, GA., *April*, 1852.

ART. IV.—*On the Climate and Diseases of California*.—By JAMES
BLAKE, M. D., F. R. S.

THE investigation of the modifications produced on diseased action by the influence of external circumstances opens an interesting field to the researches of the medical philosopher; for it presents an example of an experiment made by nature on a vast scale, in which some of the most important elements modifying disease are so completely changed, that we have an opportunity of observing the phenomena they present, under circumstances

which would never have been produced by artificial means. This consideration invests the subject of the investigation of disease in this country with a degree of interest which renders it worthy the attention of those who take a pleasure in elucidating its complicated phenomena; and whilst fully realizing the importance of such an investigation, I have to regret that the data which a limited practice has enabled me to collect can throw but little light on the subject. The facts, however, that have been observed, in relation to the climate of our winter months, will probably be interesting to many of your readers. The data recorded have been only those which are likely to influence the progress and character of disease, and, as it will save space, I will present them in a tabular form.

	Nov.	Dec.	Jan.	Feb. 1 to 16.	March 8 to 31	April
Mean temperature	51°	44.6°	47.7°	49.2°	52.2°	60.7°
Highest temperature	73	68	70	71	79	93
Lowest temperature	31	26	31	28	32	39
Mean of maxima	66.2	57	60	64.4	66.6	77.5
Mean of minima	42.6	36	37.2	37.8	44	49.3
Mean temperature of north winds	48	41	46	51	51	63
Mean temperature of south winds	55	50	50	49.5	50.7	58
Mean minima of north winds .	34	32	38	39.5	37	49.2
Mean minima of south winds .	48	43	39	38.5	42	48.5
Number of days of north wind .	15	7	10	6	5	5
Number of days of south wind .	12	8	4	4	12	12
Number of calm days	13	16	17	6	7	14
Number of clear days	16	20	19	13	9	13
Number of cloudy days	7	6	6	3	8	12
Number of rainy days	7	5	3		7	4
Amount of rain	inches. 2.7	inches. 2.5	inches. 0.7		inches. 2.5	inches. 1.8

From the above table it will appear that the most important feature in the climate of this country, during the winter months, is its equability. In no instance has the thermometer fallen more than 21° below the mean temperature in any one month, and the difference between the mean temperature, taken at the coldest part of the day, and the lowest temperature observed during any month, does not exceed 11°. This fact presents a striking contrast with the variations of temperature observed in the Atlantic States, where it is not at all uncommon to find the thermometer descending thirty or forty degrees below the mean temperature, even of the minima. In Rome, where the average temperature of the winter months is about the same as here, the thermometer sometimes descends as low as 23°, whilst here it has not been noted below 26°; and there can be no doubt that the winter of 1850-51 was a cold one, on account of the absence of strong southerly winds and rain, which are always accompanied, during the winter months, by a higher temperature. From all I could learn from those who had been in the country for many years, the temperature of 26° was a cold they had never before experienced. This season, 30° is the lowest point that has been reached; in

fact, the temperature of the winter months is most congenial, being generally about 36° at sunrise, rising to about 60° during the day, and again falling towards evening.

The direction of winds in this part of the valley is, as a general rule, N. and S., or varying but very slightly from these points. I have never observed an easterly wind; and this absence of easterly winds is a fortunate circumstance as regards the climate of the valley, as a strong wind from that direction, blowing across the snowy peaks of the Sierra, could not fail to bring with it unpleasant indications of the country it had travelled over. The influence of the winds on the temperature varies according to the season of the year. In the winter months, the north winds are the colder, and the south winds, which, when strong, are always accompanied by rain, are warm. Towards the spring, the north winds become warmer, on account of the sky being generally clear when these winds are blowing, and the sun having more power raises the temperature. It will be seen, however, that the mean minima of the north winds, or the lowest temperature observed on those days on which the wind is from the north, is still below the minima of south winds until the month of April, when the summer climate decidedly shows itself, in which the north winds are always the minima. As regards the force of the winds, it is generally but slight; it only blew hard from the south twice during the whole of last winter, and the north winds are generally very light. The atmosphere is usually calm, or only agitated by slight local currents.

It will be seen, also, by the tables, that the sky is, as a general thing, clear, and this is so during the only season of the year in which a cloud is ever to be seen in the heavens. The quantity of rain that fell during the winter of 1850-51 was about eleven inches: there can be no doubt but this was much below the average, and probably not more than a fifth of what fell in 1849-50. During the whole of the winter months, the air is decidedly moist, the dews are extremely heavy at night, the air is frequently loaded with fogs in the morning, and it is rare to see a difference of more than six or eight degrees between the wet and dry bulb thermometers.

On account of being engaged in geologizing in the mountains during the summer, I have not any extensive series of observations showing the nature of the climate during this season. The principal characteristics of our summer climate are, a high temperature during the day, cool nights, and a dry state of the atmosphere. From some few observations made at Sacramento, during the months of July and August, the average temperature at sunrise was 63° , at 3 P. M. 94° . The highest temperature noted was 98° , although I was not in the valley during the hottest days. On one occasion, last summer, the thermometer rose to 106 in the shade; this was in the mountains, and it is probable that the thermometer was almost as high in the valley. During the summer months, a southerly wind generally prevails, rising about eight or nine o'clock in the morning, and continuing until sunset, or even during the whole of the twenty-four hours. This tends to moderate the temperature, tempered, as it un-

doubtedly is, by the cold sea-breeze that blows so constantly on the coast. The hottest days are those on which the wind is from the north, loaded as it is with the heated air of the valley between the Sierra and coast-range. But the most important element, as regards the summer climate, is its hygrometric condition. From observations made in July and August, the mean quantity of humidity contained in the atmosphere was not, during the hottest part of the day, more than 40 per cent. of that required for its saturation, and I have not seen it rise above 74 per cent. even at sunrise. In September and October, the temperature becomes lower, and at the same time a considerable change takes place in the condition of the atmosphere. The sky still remains unclouded and the weather dry; but the winds, which are rarely absent during the months of May, June, July, and August, are now seldom felt, and the air becomes more moist. The mean of some observations made in September gives 80° as the mean maximum, and 60° as the mean minimum. The atmosphere, at the maximum, contained 66 per cent. of moisture, and in both it had increased to 73 per cent., although no rain had fallen.

I will close my observations on the climate of this part of California by a few general remarks. The data, as far as they go, show that the temperature of the winter months is about the same as that of Rome, without being subject to such variations as are experienced in that climate. Another advantage, also, which it possesses over the climate of Italy is that here the rains are always accompanied by warm winds, whilst at Rome the atmosphere is frequently exceedingly cold and chilly in rainy weather. As before stated, I believe that the temperature of the winter 1850-51 was below the average. The temperature has certainly been milder during the present winter; the thermometer has not been lower than 30° , and at that point but on one occasion. During the summer months, the weather is most agreeable; for, notwithstanding the high temperature, the constant breeze and the dryness of the atmosphere prevent the system from being oppressed by the heat; whilst the wet bulb thermometer ranges from 60° to 70° , even during the hottest part of the day, there is no danger of the human frame, with its large evaporating surface, being injuriously affected by heat. The only period at which the heat is felt oppressive is in the months of September and October; a temperature of 80° will produce more inconvenience here than a temperature of 96° in the month of July, on account of the difference in the hygrometric state of the atmosphere.

These observations regarding the climate of this country will apply only to the valleys of the Sacramento and St. Joaquin, or the district comprised between the Sierra and coast range; and as a short notice of the topography of the valley may be useful, I will, before commencing any remarks on the diseases, give its general outlines. The valley extends a distance of about five hundred miles north and south, varying in breadth from forty to eighty miles, from the lower hills of the Sierra to the coast range of mountains, the west of Sierra being from sixty to one hundred miles farther to the east. Through the valley run the Sacramento, coming from the north, and the San Joaquin

from the south. These two rivers drain the waters from the western slope of the Sierra, and from the eastern slope of the coast range. They find their way to the ocean through a considerable break in the coast range. The rivers are bounded on each side by extensive flats subject to annual overflow, and forming an immense extent of marsh land; these flats are intersected, in all directions, by extensive sloughs and lakes, which frequently have no communication with the river except at the time of high water; in fact, as a general thing, the immediate banks of the river form the highest part of the country, so that, when the waters fall after an overflow, a very large extent of country is left undrained, from which the stagnant waters are gradually dried up by evaporation under the rays of a powerful sun. At the time of writing this, the water is covering an extent of country ten or twelve miles in breadth, and in some places much broader. The soil of the valley is a fine alluvium, in some parts sandy, in others composed of tenacious clay. These superficial layers repose on alluvial strata, which, being generally gravelly, allow, I believe, the water to drain off to some extent, although there is always a very large surface from which it disappears but by the slow process of evaporation. The short time during which I have been practising in the Sacramento would not justify me in going into any details, or attempting any generalizations on the diseases of this climate. I propose merely to make a few observations on some of the cases that came under my care, and I have appended a list of the cases admitted into the State hospital in this city, although that institution receives by far the greater part of its inmates from other portions of the State.

During the months of October and November, 1850, the principal diseases were dysentery and diarrhœa: 85 per cent. of the cases I attended, during these months, were of that nature. The dysentery was of a very untractable character, wearing the patient down by frequent bloody discharges, and even when checked being constantly reproduced. It was very fatal; in the absence of any positive data, I believe about 30 per cent. of those attacked died. The great mortality was not so much owing to the virulence of the disease itself as to the peculiarly unfavourable circumstances in which those attacked by it were placed. By far the larger part of the sick, probably 90 per cent., consisted of emigrants who had just crossed the plains, having accomplished a journey which, at all times fatiguing, was in the year 1850 attended with the most trying circumstances. By far the greater number of emigrants who arrived here in the autumn had not only been broken down by fatigue, but had been forced to subsist on a short allowance of food, and that frequently of a bad quality. Under these circumstances, it is not surprising that the first opportunity that was afforded them for satisfying their appetite should have been made an occasion for overloading the stomach, and thus producing diarrhœa. The sudden change from the dry, bracing atmosphere of the interior of the continent and the mountains, to the comparatively heavy, warm air of the valley, exerted a most depressing effect on the

system. On this point I can myself testify; for, although without any apparent sickness, yet for the first three weeks after my arrival in the country, from crossing the plains, I was so prostrated that I could lie on my bed during the whole day, without the slightest energy, either physical or mental, and many of my friends were affected in the same way. Disease, I believe, is often brought on by men attempting to work while in this state of prostration. The diet, also, was a fruitful source of disease, not only as regards its quantity, but even its quality. The only fresh meat to be had was beef, and this was generally fried, or rather boiled in rancid lard; the flour was to a great extent damaged, and the butter and salt meat were all more or less rancid. I state these facts to show that, although diarrhoea and dysentery prevailed here to so great an extent, and so fatally, during the fall of 1850, the causes of its ravages are to be looked for principally in the unfavourable circumstances in which the population was placed, rather than to any malarious influence. But not only were these circumstances fruitful sources of disease, but they presented an almost insurmountable obstacle to recovery, even when the more violent symptoms had been subdued. There was no such thing known here as that valuable hygienic remedy called nursing. From the toast water of the sick room your patient had to go back to the beef, salmon, and rancid grease of the boarding-house. There were none of those light and valuable edibles which gradually lead the invalid by a safe path back to his ordinary diet. Relapse after relapse occurred, and it wanted but little assistance from the diarrhoeic influence which generally precedes the appearance of cholera, to produce a state of gastro-enteric disease amongst four fifths of the newly-arrived population.

In this state of the general health, the cholera made its appearance about the beginning of November, and never did it fall on a population so prepared to yield to its ravages. Although it is impossible to obtain any accurate data as to the number of its victims, yet I am confident that, during the few days at which it was at its height, not less than one per cent. of the population was daily carried off by it. There was nothing peculiar in the disease as it occurred in this country; its apparent virulence can be accounted for by the previous state of those attacked. The tables appended, showing the returns from the State hospital in this city, prove that, even during the summer and autumn months, there is very little tendency to gastro-enteric disease, at least when the exciting causes above alluded to are absent.

The diseases more particularly characteristic of the winter months are typhus fever, rheumatism, erysipelas, and pneumonia. The cases of typhus that came under my care were of a mild form, although generally lasting from fourteen to twenty-one days. In none of the cases which I treated did any unfavourable symptoms present themselves. The treatment was purely expectant, with the exception of quinine or bark, and stimulants towards the latter period of the disease. In two instances, the rose-coloured spots were noticed on the sixth day of the disease. From the returns of the State hos-

pital, it would appear that this disease was prevalent during the autumnal months of last year, and the mortality was 39.7 per cent., a decidedly large mortality. Only three cases were admitted from the city, the others being brought in from the country.

The cases of pneumonia showed themselves soon after the first rains, and could generally be traced to exposure to wet and cold: they were very amenable to treatment. But three cases came under my care, and in every case the patients made a rapid recovery, the time of treatment averaging nine days.

Rheumatism was one of the most common diseases during the winter months of '50 and '51, attacking principally those who had been previously affected by diarrhoea and dysentery; and in these it generally presented itself with very troublesome, and in fact alarming, symptoms. The disease was generally of a low type, and in every case that came under my care was accompanied by inflammation in the muscles, or at least in the aponeuroses; this inflammation was the principal and most distressing symptom. In two of these cases, suppuration took place; in one subject, in the calf of the leg, under the gluteus maximus and under the trapezius; and, in the other, in the calf of the leg. In three other cases that I treated, these swellings were present in the calf of the leg, and although I was led strongly to suspect that pus had formed, yet they recovered without any abscess being opened. Pericarditis existed in three cases, but, notwithstanding the unfavourable character of the general disease, this complication did not present itself in a severe form. One of the cases terminated fatally, that in which matter had formed so extensively. I believe the case would have been saved had it remained under my care; I was, however, superseded by a herb doctor, whose first care was to bind up the abscesses as tightly as possible to prevent the discharge from weakening the patient. The treatment adopted was the administration of colchicum and quinine, and sometimes sulphate of iron; recovery was slow; the average time of treatment being forty-one days. I had an opportunity of seeing some other cases in which the same symptoms showed themselves. Rheumatic affections are not so common amongst the mining population as we might be led to expect from the exposure to which they are subject, working, as too many of them do, for hours at a time in the water, and also frequently exposed to rain. But very few cases of this disease have been admitted into the hospital during the past year, and this is probably owing to the absence of diarrhoea and dysentery, which seem to exert a peculiar influence in predisposing the system to rheumatism.

Erysipelas is a disease which has been extremely fatal in the country during the last twelve months; but it has existed to a greater extent in the mountains than in the valley. During the course of last winter, five cases came under my care; in all of these, the head was the only part involved, with the exception of one in which the inflammation spread to the shoulder and chest; three of these cases occurred in the same house, and the first case that showed itself was in a man who had been living in another house in the

country, where there was a case of the disease. The most striking peculiarities of these cases were the inflammation of the mucous membranes communicating with the natural openings, and the absence of that amount of general and cerebral disturbance which so often renders erysipelas of the head a formidable disease. In every case, the mucous membrane of the mouth and fauces was inflamed; in four cases, there were ulceration and discharge of fetid pus from the nostrils; in three cases, the palpebral conjunctiva was severely affected; and, in four of the cases, there was discharge of pus from the ears. And yet, notwithstanding these symptoms, the cases in which they presented themselves were attended with as little cerebral and general disturbance as any I have ever seen, in which the head was involved. The fever never rose high, nor was depletion required in any case. A dose of blue pill and castor oil, and then quinine, combined with small doses of blue pill and rhubarb, was the treatment usually adopted. The only case that terminated fatally was a man of intemperate habits, who died from a complication of the disease with pneumonia. The average duration of the treatment was nine days. This disease is of frequent occurrence in the mountains, and I have seen many cases of it during the summer. The localities where it mostly prevails are the deep valleys in the mountain districts, which are shut in on all sides by high hills, where the extremes of temperature are great, and the air has a tendency to become stagnant. In some of these places it has proved extremely fatal, the mortality being more than fifty per cent. This large mortality is to be accounted for partly by the intemperate habits of many of the subjects attacked by it, but also in a great measure, I believe, from the too general use of calomel, and from not giving quinine and tonics at an early period. In two of the cases that came under my care, granular conjunctivitis remained as a sequela of the disease, and I have seen some very severe cases of this affection that have been produced by it.

Diseases of the air-passages are extremely rare. A mild form of catarrh showed itself apparently in an epidemic in February, 1851, and the same affection is occasionally met with during the winter months; but I have not yet seen a case of acute bronchitis, and the experience of many of my medical friends in the city is to the same effect. This is probably owing to the absence of cold dry winds during the winter months. Very few cases of phthisis are met with, considering the circumstances in which so large a portion of the population is placed, and which in other climates could not fail to develop the latent germs of this disease which exist in so many individuals. Speaking from my own limited experience, it is more amenable to treatment here than in any other country in which I have practised. Two cases of the disease in an early stage have come under my care, occurring in individuals who had a strong constitutional tendency to it; in each case, hæmoptysis to some extent had occurred, and that partial solidification of the lung, indicated by the prolonged rough expiratory murmur evidently existed. One of these

cases has apparently quite recovered, the individual having enjoyed good health for some months. The other case is improving, having gained six pounds in weight during the last month; cod-liver oil, with quinine and iodide of iron, has been the remedy used. It is an interesting fact that in neither of these cases was any marked symptom of bronchial irritation present, and I believe the exciting cause of the disease had, in each case, been improper diet, or living too long on salt meat, which probably was rancid. A better diet was ordered, and strictly adhered to; and it is the advantages derived from this, and also from the complete absence of any source of bronchial irritation, that have rendered the disease so amenable to treatment. Many cases prove fatal, as well here as elsewhere; but I believe that the climate of this country presents advantages such as are not to be found in any other part of the civilized world, for the treatment of phthisis in its earlier stages.

The diseases arising from malaria might be expected to be very prevalent in the valley of the Sacramento, containing, as it does, thousands of acres of lands subject to annual overflow, and from which there is no escape for the water except by the slow process of evaporation under the rays of an intensely hot sun; yet, notwithstanding this, cases of intermittent and remittent fever are comparatively rare in this part of the valley. A few mild cases of intermittent fever occurred in the neighbourhood of the city last spring, but they appeared to be confined to low localities which were situated in the immediate vicinity of stagnant water. I have heard of but two cases of congestive fever, and both of them on low bottoms near the American River, about three miles from the city. As a general rule, the city is exempt from any of the more violent forms of malarious disease; a few mild cases of intermittent and remittent fevers occur, but they are comparatively rare. The whole number of cases admitted into the hospital in this city, which originated in Sacramento, was twelve during the last summer and autumn. But, although the influence of malaria does not show itself by producing any of the more marked forms of disease by which its presence is usually manifested, yet we have constant indications of its existence, by the character it impresses on almost every form of disease occurring in this locality. It would appear that, when in the usual state of health, there are very few individuals in the community who are susceptible to its influence, but when the resisting powers become weakened by any form of disease, the malarious influence then makes itself felt, modifying to a greater or less extent a very large amount of the cases of other diseases. This influence it is often difficult to detect; it is not manifested by any marked symptoms of intermission or even remission, but can only be suspected from the apparent obstinacy of the disease, and from the effect of treatment. Dysentery, diarrhoea, erysipelas, rheumatism, chronic gastritis, and even pyrosis, cases in which the remedy might appear to be strongly counterindicated, were benefited by the use of quinine, and, in fact, would not yield without it. This modified existence of malaria, in a locality

where the elements from which it is generated surround us on every side, is probably to be accounted for by the dryness of the atmosphere during the hottest months in the year; to the moderate temperature that generally prevails when the amount of humidity in the atmosphere would favour its propagation or diffusion; to the prevalence of constant breezes during the summer months; and to the coolness of the nights, which conduces to refreshing and invigorating sleep.

As regards the number of cases of bilious remittent reported to have been admitted into the hospital, I believe they were for the most part cases of the mildest form of remittent fever. I understand from many medical gentlemen who practised here during the summer, that they did not see a single case of bilious remittent, and the short time the patients remained in the hospital (on an average eight days)* would indicate a very mild form of remittent fever. From the most accurate information I could acquire (for no records are kept), the greater number of the cases came in from the upper part of the valley, more particularly above Marysville. Scrofulous diseases are rarely met with, and I believe the climate will be found to offer the most favourable conditions for the prevention and cure of this class of diseases.

Diseases of the skin are rare; eczema is the only one I have met with. Onychia is common among the mining population, and slight wounds on the hands are very apt to prove troublesome; this is probably owing to the nature of the diet, for even when wholesome articles of food can be obtained, they are generally spoiled by boiling them in rancid grease. The quantity of rancid grease and salt meat eaten in this country with apparent impunity offers but a poor confirmation of the views of Liebig, of the injurious effects of partially decomposed substances on the animal economy.

Diseases of the nervous system are not very common, although I believe forming a larger proportion in comparison to the whole amount of disease than in the Atlantic States. A very large number of cases of insanity have occurred, thirty-eight insane patients having been received into the hospital from May to December. This prevalence of insanity is undoubtedly owing to moral more than to physical causes, although the extreme dryness of the atmosphere during the summer undoubtedly renders the nervous system peculiarly excitable. There is one fact with which I have been struck whilst travelling in the mountains during the last summer; viz., the rare occurrence of *coup-de-soleil*. It might be supposed that the miners would be peculiarly liable to this disease, exposed as they are for hours to the burning rays of the sun, and frequently with their feet in ice-cold water; yet I have never seen or even heard of an instance of sun-stroke, although the rays of the sun are certainly more powerful here than in most of the Atlantic States.

* In drawing up this average, three cases were excepted in which the patients remained in the hospital thirty-seven, fifty, and sixty-four days, and in which there was undoubtedly some complication.

The climate in the mining regions very much resembles that of the valley, and it is necessary to ascend some distance in the mountains before any marked difference is noted, even in the temperature. I have no correct data on this point, but the state of vegetation would indicate that there cannot be much difference in the temperature. When I left Placerville (about sixty miles south of Sacramento), three weeks since, or in the middle of February, the young shoots of the buckeye were three inches long. The *masoneeta* (a species of *erica*) was in full bloom. The humming birds were building their nests, and I believe vegetation was quite as forward, and, perhaps, more forward than in the valley. This was at an elevation of two or three thousand feet above the valley.

The mining regions are generally extremely healthy, with the exception of those localities which are situated in deep valleys surrounded on every side by high hills. Here the extremes of temperature are very great. As a general thing, the nights in summer are calm, and the great radiation that takes place under a perfectly clear sky rapidly cools the layer of air in direct contact with the ground. This cold air can be felt running down every guiley and ravine leading into these deep hollows, and if there is not any large opening by which it can drain off, it accumulates and fills the valley with a body of dense, stagnant air, the temperature of which descends very low before morning. In such places, typhus fever and erysipelas were very prevalent during last summer, and were also very fatal. With this exception, the mountain regions are very healthy; and it is a striking fact, in confirmation of this, that exposure can be borne here to almost any extent with impunity. During ten months in the year, the shelter of a tree is all that is required. When travelling in the mountains, I always slept in the open air except when it rained, and I never experienced the slightest inconvenience from so doing; nor have I ever seen any instance in which bad results followed, except in wet weather. This is very different from what we are taught to believe as regards exposure to the night air in the Atlantic States, with how much reason I cannot pretend to say, never having there tried the experiment. The general health of the community is, I believe, of a higher character than in any other part of the Union; the complexion here generally assumes that ruddy tint which is considered, and I think justly, as the most unequivocal sign of a high state of health in individuals of the Anglo-Saxon race. A residence of a few months in the country is almost always accompanied by a marked increase in weight, and there can be no doubt but that the climate is conducive to fertility in the female. Although I may expose myself to the charge of enthusiasm as regards the climate of this country, yet I am but expressing my candid opinion when I state that I believe California will be found more conducive to the highest physical and intellectual development of the Anglo-Saxon race, than any other part of the globe. There is not a day in the year in which the powers of the mind or of the body are enervated

by heat or numbed by cold. And when the agricultural resources of the country shall become developed, and the swamp lands reclaimed and brought under cultivation, I believe that every external influence, detrimental to the preservation of health, will be reduced to a minimum.

Table showing the number of cases of the principal diseases admitted into the State Hospital, Sacramento City, with their average mortality and duration of treatment.

	June.	July.	August.	September.	October.	November.	December.	Total.	Number of deaths. Per cent.	Average time of treatment.	Number of cases in Sacramento.
Intermittent fever		6	6	11	12	4	6	45	1.2	7 dys	5
Bilious remittent fever	4	6	21	21	33	19	8	116	4.3	8	6
Congestive fever		2		2				4	50.0	6	1
Typhus fever			1	4	12	5	11	33	39.7	13	3
Continued fever	3	2	2		1	2		10		9	
Erysipelas			1	4	3	1	2	11	15.1	7	1
Diarrhœa	3	1		1	1	3		9			
Chronic diarrhœa	4	2	2	3	5	3	1	21			
Dysentery	2	1	1		1	2	6	13	56		
Acute bronchitis						3		3	54		
Chronic bronchitis	1		2		1			4			
Pneumonia							5	5	100		
Pleurisy	1					1		2			
Acute rheumatism	9	3	2					14			
Chronic rheumatism	3	2	5	7	4		2	23			

SACRAMENTO CITY, March 14, 1852.

ART. V.—*A Case of Saccharine Diabetes, with Tabular Observations of its Pathology, and the Results of Treatment.* By CHARLES FRICK, M. D., Baltimore.

THE following case of saccharine diabetes has been under my care, in the Maryland Penitentiary, for the past ten months. From the particular advantages for medical observation to be obtained in an institution of this character, inasmuch as the amount of exercise, diet, and labour is nearly equal from day to day, I have had better opportunities for obtaining comparative results, and am enabled to state more facts, in relation to this particular case, than could be ascertained elsewhere. And although I have not been able to deduce any explanation of the pathology of this disease which is much in advance of the theories which at present prevail, yet I feel assured that I am enabled, on the one side, to substantiate beyond doubt many of the facts recorded by previous observers, and on the other to settle definitely one or two disputed points. I should moreover state, at the commencement, that the quantity of

ingesta and egesta, as recorded in the tables, I am satisfied, is strictly correct, and whenever I had reason to suspect the least inaccuracy the observation was thrown aside as worthless.

Nicholas Matthews, mulatto, æt. 37 years, height six feet three inches, weight 180 lbs., entered the prison March 23, 1851, under a sentence of nine years. He is not fleshy, but strong and healthy in appearance. Previous to his confinement, he lived in the country, near the village of Ellicott's Mills. The soil is of granitic formation, and he worked most of his life in the open air as a stonecutter. His health, for the last nine years, has been so good that, during that time, he has not lost a day from sickness, and was enabled to do as full a task as any one working at the same occupation. Nine years ago he was treated for a pleurisy on the right side, which confined him to the house for two weeks, and he has, at this time, slight dulness on percussion on that side, from old false membranes. He has always been well fed and clothed, and has been a temperate man, for the last nine years having not once tasted ardent spirits. His diet consisted of vegetables, meat, and bread, and neither his appetite nor thirst could be considered inordinate. The meat was almost always salt, and the bread contained no yeast, he having ascertained that ordinary fermented bread was apt to occasion pain in his bowels. He says that his father had something like diabetes at the age of forty; but it passed off in a few years, and he is now alive at the age of eighty-four. None of his relatives died of phthisis. One brother, aged fifty-eight, is at present an inmate of the prison, sound and well in every respect, and another he lost from pneumonia. He had never noticed anything wrong about his urine, and is confident that he never passed any unusual amount before his confinement. About a year since, he remarked, for the first time, that he had occasion to rise once at night to empty his bladder. This has continued ever since. After the attack of pleurisy, he had attracted attention among his fellow-workmen from the fact of his excessive perspiration. Since his residence in the prison, his skin has been dry except in hot weather. For some years he has been subject to pain across the loins, and occasional cramps in the solei muscles. But these he attributes to an inguinal hernia which was produced about that time. The day of his entrance he was placed in the spinning-shop, where he continued for five weeks at work, when my attention was attracted to him. He had lost twelve pounds in weight, complained of great weakness in his knees, and inordinate appetite and thirst. This latter, he stated, had been so great that in the dormitory, where he could procure no water, he had drunk his own urine, which he described as being sweet to the taste. On testing it, I found it distinctly saccharine. He was then removed to the hospital for more accurate observation, and for three weeks was subjected to different kinds of diet without remedial treatment; every article of food eaten, and the exact quantity of urine discharged, being ascertained throughout the whole period. I ascertained that his lungs and heart were perfectly sound. There was no pain in his head, neck, or along the spinal cord, with or without pressure. The liver and spleen are of natural size, and all the abdominal organs, as far as I can discover, are in a normal condition. His health now is about as good as at entrance. At different periods of his confinement, I have examined the following fluids of his body for sugar. The test most commonly used was the addition of liquor potassæ and sulphate of copper, known as Trommer's. I also used Moore's test, the Barreswil liquid, yeast, and nitrate of silver. Of these, Barreswil's liquid gives the most satisfac-

tory results, provided the quantity added before heating be equal at least to one-third or one-fourth the quantity of urine.*

The urine was examined repeatedly, and always contained sugar, the amount holding a definite relation to the specific gravity.

The sweat was examined several times. Half a drachm collected by a spoon from his skin always gave the characteristic reaction.

An infusion made by pouring boiling water on the feces, filtering, and then boiling with animal charcoal to decolorize, always contained sugar. The largest quantity was obtained from the stools passed during an attack of cholera morbus.

On treating the contents of his stomach in the same way, whether ejected by cholera morbus or by an emetic, the characteristic reaction was always made evident. This was most marked in the matters thrown up a few hours after a meal, and was present when the diet consisted of meat and eggs alone. I think we may account for it in this case, by its presence in the mucus and gastric juice ejected at the same time.

While labouring under catarrh, the mucous expectoration from his bronchial tubes, on being diluted with water, gave the characteristic reaction.

This was also the case with the saliva, in every instance that I examined it. Bernard states that true saliva in this disease contains no sugar; but, as I was unable to separate the secretion obtained from the parotid and sublingual glands, and the buccal mucous membrane, I cannot assert that he is mistaken.

Blood was taken from him, in two instances, by cups. At both times it contained sugar, and gave the characteristic reaction in a more marked degree than any of the fluids examined. Its detection was very simple. About half a drachm of serum was diluted with half an ounce of water. This was heated to coagulate the albumen, filtered, and the test applied to the filtered fluid. Or, an ounce of blood was dried, pulverized, and alcohol poured on it. This was filtered and evaporated at a gentle heat; then dissolved in water. Only a few drops of this solution were necessary to indicate the presence of sugar.

From an abscess of the hand half a drachm of pus was collected. This was diluted, boiled, and filtered. The usual test gave the characteristic reaction.†

It is thus shown that all the secretions of his body which were available for examination indicated most decidedly the presence of sugar, and this without any relation to the diet, although the reaction was most marked when sugar or starch was used as food.

* The composition of the Barreswil fluid, for which I am indebted to Dr. Donaldson, is as follows:—

- R. Crystallized carbonate of soda ʒj, ʒij;
 Caustic potash ʒij, ʒij;
 Bitartrate of potash ʒj, ʒij;
 Sulphate of copper ʒj;
 Distilled water Oj.

M. To be boiled, and then filtered.

† I am aware that the reduction of the oxide of copper may be produced by other organic substances besides sugar, and that from the presence of albumen false inferences may be drawn. Such, I am satisfied, is not the case in the present instance.

Table Exhibiting the Influence of Diet.

DATE.	Hour of day.	Urine passed in ounces in 24 hours.	Fluid drank, in ounces.	Specific gravity of urine.	Quantity of sugar passed from kidneys, in ounces.	Quantity of sugar contained in food, in ounces.	Water drank, in ounces.	Tea drank, in ounces.	FOOD EATEN.						Stools.	Perspiration.	REMARKS.
									Eggs.	Meat, in ounces.	Bread, fermented, in ounces.	Bread, unfermented, in ounces.	Dry farina, in ounces.	Sugar, in ounces.			
May 8	11	181		1.033	16522												
" 9	11	240	259	1.013	2566	1440	197	60	6	16					None	Moderate	Weights, to-day, 163 lbs.
" 10	11	204	214	1.013	2083	1440	154	60	8	16					1	Profuse	5ij of sweat collected; contains sugar.
" 11	11	150	166	1.026	3430	3744	106	60	6	16	6				None	Profuse	
" 12	11	159	175	1.033	5026	3714	115	60	2	16	6				None	Profuse	
" 13	11	165	176	1.030	4517	3744	116	60	5	20	6				None	Considerable	Mucus from bronchial tubes contains sugar.
" 14	11	143	156	1.006	208	None	156		6	16					3 loose	Considerable	
" 15	11	75	84	1.021	992	None	84		6	16			1		None	Scanty	
" 16	11	52	98	1.034	1263	1400	39	59	6	24			3		3	None	Weights, to-day, 168 lbs.
" 17	11	86	165	1.029	1964	1370	107	58	6				10		3	None	Yesterday's stools contain sugar in abundance.
" 18	11	63	125	1.024	925	None	125		6	24					2	None	
" 19	11	39	104	1.024	325	None	104		6	32					2	Moderate	Detected sugar in sweat to-day.
" 20	11	84	93	1.031	2088	None	93		6	32					None	None	
" 21	11	133	150	1.030	3539	1440	90	60	6	16					1	Moderate	Weights, to-day, 162 lbs.
" 22	11	341	390	1.037	12800	27820	230	160	6					44	None	None	Sugar produced nausea, but no vomiting.
" 23	11	264	293	1.034	9065	15840	113	180			30				None	None	
" 24	11	251	273	1.036	8888	14100	153	120			30				None	None	
" 25	11	169	180	1.036	5732	17856	60	120				39			1	None	
" 26	11	228	260	1.034	7830	17856	140	120				39			2	None	
" 27	11	321	351	1.030	8461	17856	231	120				39			1	None	
Jan. 21, 1852	11	214		1.033	7306	18432		None			48				3 loose	None	Weights, to-day, 163½ lbs.
" 22	11	252		1.030	7162	18432		None			48				1 loose	None	

An examination of the preceding table allows us to make the following deductions :—

In the first place, that the quantity of urine is in itself no measure of the extent of the disease, it being regulated by the quantity of fluid drank, the perspiration, the number of fecal evacuations, &c. That in no instance was the quantity of urine passed greater than the amount of fluid drank, although a writer in the October number of the *Archives Générales de Paris*, assuming that the contrary was always the case, has endeavoured to prove that in diabetes a portion of the water in the renal secretion is produced by the union of hydrogen and oxygen within the body. On comparing the two columns of fluid drank and fluid passed, which I have placed side by side for better comparison, it will be seen that the relation between the two is very exact, and becomes more or less disturbed in proportion to the number of stools and the profuseness of the perspiration.

The quantity of sugar, although in a great measure dependent upon, is not always in proportion to, the amount of urine passed. A certain quantity of sugar is to be eliminated by the kidneys, and a proportionate amount of water is necessary for its solution. This want is intimated to the sensorium which seeks to supply it, just as a farther supply of material for carrying on the functions of the animal body is intimated by the sensation of hunger. And I ascertained, in the case of the patient under consideration, that when he was made to drink more or less fluid than he desired, the quantity of sugar remained the same, the specific gravity of the urine only undergoing alteration. For this reason he was allowed to drink an unlimited quantity of water, so that he rarely complained of thirst. In calculating the amount of sugar in his urine and food, I do not pretend to have been perfectly accurate; but, as my object was to obtain facts which would enable me to institute comparative results, I feel assured the mode of proceeding has been sufficiently exact. The quantity of urine, and the specific gravity at each period of voiding it, were accurately determined, and the amount of solids calculated by the ordinary table. I had previously ascertained from analysis that the usual healthy ingredients were all present in about their normal quantity, and as these vary, in a healthy individual, from 600 to 700 grains in twenty-four hours, I assumed them to be 650 grains, which amount was deducted from the whole solids, and the remainder considered as sugar. The quantity of this substance in the food was ascertained by taking the analysis of the different articles of diet, as laid down by different authorities, and estimating the quantity of sugar, and of substances capable of forming it, in each separately.

On comparing these two results, it will be seen that, although on five days no sugar or those substances capable of forming it were taken as food, yet, nevertheless, an average of 707 grains was passed each day from the kidneys; thus establishing the fact, previously stated by Bernard, that the source of the sugar is due to some cause beyond the non-conversion of the saccharine and amylaceous elements of food. Taking this fact into consideration, it is shown that the additional proportion of these substances, as diet, influences directly the quantity of sugar excreted. And whether the food consists of sugar alone, or a combination of sugar and starch, the result is nearly the same. Thus taking into consideration the quantity contained in the fecal discharges, on forty-four ounces of pure sugar the same proportionate amount was excreted as on thirty ounces of leavened, or thirty-nine ounces of unleavened bread.

I have arranged the following table to show the aggregate and average

amounts of sugar and urine passed between the different hours of the day, for fifteen days, at various intervals:—

Hour of day.	Aggregate quantity of sugar, in grains.	Average quantity of sugar for each day.	Aggregate quantity of urine, in ounces.	Average quantity of urine for each day.	
7 to 8 P.M.	4329	288	145	10	
8 to 9	5356	357	186	12	
9 to 10	5434	362	194	13	
10 to 11	7019	468	229	15	
11 to 12	1008	67	48	3	
12 to 1	6119	408	175	12	
1 to 2	1590	106	60	4	
2 to 3	3477	232	110	7	
3 to 4	3924	262	122	8	
4 to 5	2468	164	68	4	
5 to 6	3426	228	104	7	
6 to 7	2438	163	74	5	Breakfast.
7 to 8 A.M.	1836	122	54	4	
8 to 9	1751	117	55	4	
9 to 10	2548	169	82	6	
10 to 11	6924	462	209	14	
11 to 12	4312	287	133	9	Dinner at 12.
12 to 1	5047	336	151	10	
1 to 2	6597	439	197	13	
2 to 3	6459	436	219	15	
3 to 4	8636	576	301	20	
4 to 5	9622	630	338	25	
5 to 6	9154	610	298	19	
6 to 7	6545	436	214	14	Supper.
		7741		253	

It will be seen, on reference to the preceding table, that during the seven hours occurring between twelve and seven o'clock, or those immediately after the ingestion of the principal meal, and under various modes of treatment, the average quantity of sugar passed is 3459 grains, or very nearly one-half of the whole amount. And, moreover, that the same is true in regard to the quantity of urine, 116 ounces having been voided in the same interval of time. Another interesting fact is also here exhibited. After each meal, both the quantity of sugar and of urine commences and goes on to increase in regular progression up to the fourth hour, when it again decreases in nearly the same proportion. This table is made up of one hundred and forty-four separate observations, and the average specific gravity of the urine for the whole number is 1.0305.

A quantitative analysis of the amount of urea was made on three separate occasions. The mode of proceeding was to evaporate the urine over a water-bath to about one-fourth its bulk. From thirty to forty ounces were used for this purpose, and the urea was obtained in the form of a nitrate or an oxalate. It amounted to 90.56 grs., 102 grs., and 121.6 grs., respectively. We will not undertake to say that all the urea contained in the specimen examined was thus obtained, and shall, therefore, draw no conclusions from its deficiency.

Table showing the comparative Effects of Treatment for 9 months continuously.

DATE.	Quantity of urine in 24 hours, in ounces.	Quantity of sugar in urine in 24 hours, in grains.	Quantity of sugar in food in 24 hours, in grains.	Medicine taken during the day and the week previous.	Stools on the day of examination.	Weight on the day of examination.	REMARKS.
June 1	313	11657	19200	None		165½	
" 8	401	11380	19200	Cod-liver oil, 93 per week		170	
" 16	358	9000	19200	Cod-liver oil, 73 per week	2	166½	Diarrhœa last week
" 22	410	11960	19200	Cod-liver oil, 203 per week	4	170½	
July 12	312	9950	19200	Cod-liver oil, 103 per week; aqua ammonia, 5 drops 3 times daily	2	173	Gained 7½ lbs. on 563 cod-liver oil in 42 days.
" 20	278	7131	20000	1-20th gr. of strychnine, 3 times daily			Pus from hand contains sugar.
" 25	136	3530	19500	Strychnine, the same	2	170½	Slight diarrhœa stools contain sugar.
" 28	78	2000	18200	1-15th gr. of strychnine, 3 times daily; 93 cod-liver oil per week	4 loose	170½	In hospital for diarrhœa.
Aug. 18	150	3550	22000	Strychnine and cod-liver oil, the same	2	170½	Has taken in 20 days 323 of cod-liver oil.
" 22	151	5320	21500	Strychnine 1-20th gr. 3 times daily			
Sept. 7	200	4070	21950	Strychnine 1-10th gr. 3 times daily		166	
" 15	90	2500	20050	Strychnine 1-7th gr. 3 times daily			Medicine has produced stiffness of neck, and increase of venereal desire.
" 21	63	867	21500	Strychnine 1-6th gr. 3 times daily	3		Only 303 were passed in first 18 hours.
" 29	217	8000	18100	None	2	162	
Oct. 5	177	4961	21400	Strychnine 1-12th gr. 3 times daily	2	157½	
" 12	187	4630	23200	Strychnine 1-7th gr. 3 times daily; cod-liver oil 103 per week		161½	
" 19	116	2658	21200	Strychnine 1-6th gr. 3 times daily; oil, the same		165	Has gained 7½ lbs. on 203 cod-liver oil in 2 weeks.
" 22	40	1000	No food	None	4 loose		Stools equal 1 gallon; contains sugar.
" 24	39	689	920	None	3 loose	162	
" 25	43	1017	4520	Strychnine 1-6th gr. 3 times daily	1		
Nov. 2	90	2467	26300	Strychnine, the same		166	
" 9	103	2037	36000	Mur. time. ferri 10 drops, 3 times daily	3 loose		
" 16	223	5261	36000	Mur. time. ferri 20 drops, 3 times daily	2 loose	161½	
" 21	267	6927	36000	Iod. potass. 3 grs. 3 times daily	5 loose	160½	Detected iodine in urine.
" 30	456	13728	36000	Creosote 1 drop; naphtha 10 drops, 3 times daily	1		Medicine produces great discomfort.
Dec. 7	412	12336	19100	Cod-liver oil, 83 per week	3	167	
" 11	572	15192	21000	Cod-liver oil, 63 per week	1	167	
" 21	515	15781	21000	Cod-liver oil, 63 per week	2	168	
" 28	618	16708	21200	Cod-liver oil, 113 per week	3	169½	
Jan. 3	612	18972	22000	Whiskey, 33 daily	1	172	Has taken 403 of cod-liver oil in 30 days, and gained 11½ lbs.
" 8	618	19138	21000	Whiskey, 33 daily	1	170	
" 13	206	4836	21000	Strychnine 1-9th gr. 3 times daily	3	170	
" 20	172	2361	22000	Strychnine 1-6th gr. 3 times daily	2	169½	
" 29	522	16701	23300	None	2	168	
Feb. 15	520	19030	23300	Calomel 1 gr.; opium 1½ gr. once daily	4	171	Taking this for 2 weeks; rises 4 times each night.
" 22	420	11950	21200	Ergot 3 grs. 3 times daily	4	180½	Says he is getting well; rises but once at night.
March 1	703	20110	26000	Ergot 3 grs.; iod. ferri 2 grs.; strychnine 1-10th gr., 3 times daily	3	171	
" 4	322	13860	25500	None	2	172	

Inasmuch as it is only of late years that we can conclude with certainty that the cases reported as diabetes were in reality that disease, we must take with considerable reservation the many accounts of their successful treatment. In the second case here reported, the patient believes himself cured, and looks to be in perfect health; but he is still passing from four to five ounces of sugar from his kidneys daily. And it is certain that, latterly, the journals less frequently contain reports of cases of this disease treated successfully. Of the ten or twelve that have fallen under my observation, most of them through the kindness of my friends, not one, so far as I know, has ever recovered.

We will now examine, in detail, the effects of treatment in this case. Each medicine was continued for at least one week, and the urine examined at the end of that period. It is impossible to make any exact comparison of these various modes, unless we could ascertain the amount of sugar passed in the stools and from the skin, as well as from the kidneys. And an examination of the preceding table will convince any one that an estimation of the increase or diminution of sugar in the urine is valueless unless, at the same time, allowance be made for the quantity passed in the fecal evacuations. The amount contained in the sweat we are forced to omit; but, as the condition of the skin remained nearly the same during the time the patient was under treatment, particularly for the last four months, we can the more readily afford to throw this element out of consideration. We endeavoured to ascertain accurately the amount of sugar contained in the stools, but with little success. There were, however, periods when he was kept, as nearly as possible, from day to day, under the same conditions, both as regards diet, exercise, and medicine; and we then remarked that, when the stools were about the same in number and quantity, the amount of sugar contained in the urine varied very little, but was increased or diminished in proportion to the fecal evacuations. From this fact, and one or two rough analyses of the fecal matters, we estimated the average amount of sugar in each stool to be about 1300 grains, and we shall assume this quantity in considering the effects of the different remedies. Whether this 1300 grains be too large or too small, the proportionate amounts remain nearly the same, and we subjoin below a comparative table of the different quantities of sugar passed from the kidneys and bowels together, while under the influence of the above remedies.

		Grains.		Grains.
Strychnine	$\frac{1}{6}$ gr.	3369	Without medicine	14520
"	$\frac{1}{7}$ gr.	3565	Creosote and naphtha	15028
"	$\frac{1}{10}$ gr.	6250	Cod-liver oil, $6\frac{2}{3}$ per week	15058
"	$\frac{1}{15}$ gr.	6425	" " $10\frac{2}{3}$ per week	16108
"	$\frac{1}{26}$ gr.	6360	Pulv. ergot	17150
Mur. tinc. ferri	10 drops	6900	Cod-liver oil, $20\frac{2}{3}$ per week	20160
"	20 "	8264	Whiskey	20504
Aqua ammonia	5 "	12550	Calomel and opium	24230
Iod. potass.	3 gr.	14270	Ergot, strychnine and iron	24340

Strychnine.—The amount passed without medicine is obtained from the

average of eleven analyses. We see, therefore, that the influence of strychnine exerts by far the greatest control over the quantity of sugar passed in the urine and feces. The patient was kept under its influence for various periods, amounting in all to four months. It is here shown that, under doses of one-twentieth of a grain, the amount is diminished to less than one-half, and under one-sixth of a grain to less than one-fourth. For three successive days he was kept upon a meat diet, and one-sixth of a grain of strychnine administered three times daily. The quantity of sugar, on the third day, was diminished to 132 grains. This was on the 30th of October, and was the smallest quantity we ever found in this patient's urine.

Mur. Tinc. Ferri.—This remedy, in doses of ten drops, diminished the sugar one-half; but on increasing the dose to twenty drops, a notable increase manifested itself, though still showing the beneficial effects of the medicine.

Aqua Ammonia.—The diminution here amounted to one-seventh. Larger doses were tried, but they produced so much uneasiness that they had to be discontinued.

Iodide of Potass.—The effect of this remedy over the excretion of sugar was little or none. It produced pain in the bowels and diarrhoea.

Cresote and Naphtha.—These also produced great inconvenience, and their effect was to increase slightly the quantity of sugar.

Cod-liver Oil.—In whatever doses this medicine was administered, its effect was to increase the amount of sugar. When six ounces per week were taken, the difference was slight; but when increased to twenty, one-third more sugar was passed. One fact, however, is worthy of notice. The patient, under this remedy, always gained weight, and, with the exception of the period when ergot was administered, only at that time. In forty-four days, on four pounds of oil, he gained nineteen pounds.

Pule. Ergot.—The patient, under the influence of this remedy, gained in one week nine and a half pounds, but the amount of sugar increased one-sixth.

Whiskey.—This increased greatly the quantity of urine, as might be supposed, and also the sugar, which amounted to one-third more than when he was taking no medicine.

Cubemel and Opium.—This was continued for two weeks, till the patient was brought decidedly under the influence of the mercury. The calls to urinate became more frequent, and the amount of sugar became nearly doubled.

Ergot, Strychnine, and Iod. Ferri.—Under this combination, the excretion of sugar was about the same as the preceding. He complained greatly of the mixture, and it will be seen that the largest quantity of urine was passed by him at this time, amounting to forty-four pints.

In concluding these remarks on the subject of treatment, we have seen that those remedies which act directly upon the nervous system exert by far the greatest power in lessening the amount of sugar in the secretions. And con-

sidering that the formation of this substance in the body was a natural process, and that our aim should be, not to prevent its formation, but to rouse up and strengthen the vital functions, in the course of whose normal action it is destroyed and eliminated from the system, we prescribed strychnine, and the result, in some measure, has justified our anticipations. It is needless to restrict the patient to an animal diet, for, although the prominent symptoms ameliorate under this treatment, the patient is not in reality better, and, in a majority of cases, the discomfort produced by the deprivation of saccharine and amylaceous food is not counterbalanced by the diminished thirst and the less frequent calls for micturition.

CASE II.—*January 10, 1852.*— — — —, a lawyer by occupation, and 37 years of age; short, stout, and having every appearance of being in robust health; applied for treatment on account of suppuration in the internal and external ear. He had lived freely for many years, drinking, principally, whiskey, but was never sick in his life, except a slight attack, three years since, of what was called rheumatism, seated in his ankle and wrist. He has been discharging purulent matter from his ear for two weeks, which discharge had been preceded by intense pain and total deafness of that side. Leeches and antiphlogistic treatment generally were ordered. On the 19th of January he complained of some pain in the right instep, but there were no external evidences of disease. On the 20th, we found that the discharge from his ear had suddenly ceased, and that he heard a watch tick distinctly, at a distance of two feet, when the day previous he could only hear it when placed directly in contact with his ear. The pain in the instep had increased, and there were swelling and redness along the course of the tendons. On the 22d, gout in both feet was well declared. On the 24th, in both wrists, and the joints of both forefingers, so that he cannot walk or use his hands in the least. His intellect is somewhat disturbed at night, and he is sleepless, but there is no tremulousness. Ordered whiskey, Tarrant's aperient, and colchicum, the latter in doses of ten drops only. His urine, which previous to the attack had been high coloured and free from albumen, was, at this time, pale and copious, and contained albumen in considerable quantity, but no sugar. On the 25th, disease the same, urine 1.035, albumen less in amount, no sugar. On the 26th, less albumen, but some evidences of sugar; for, when the albumen was coagulated and filtered from the urine, the residue gave a slight canary tint on heating it with Barreswil's liquid. On the 28th, disease subsiding, but urine contains sugar decidedly, as well as albumen, and, on standing for a few hours, throws down a copious deposit of uric acid sand. This is the first time this has been the case. On the 29th the albumen had disappeared entirely, and has not again made its appearance, but the sugar remained. The urine was of a greenish tinge, oily consistency, and strong saccharine odour, with a specific gravity of 1.036.

Feb. 1. The swelling of the joints is subsiding, and he is walking about. Urine the same, sp. gr. 1.041, passes 150 ounces in twenty-four hours, containing nearly eleven ounces of sugar.

4th. Passing ten ounces of sugar daily from his kidneys. Ordered strychnine and mur. tinc. ferri.

13th. Urine contains seven ounces of sugar.

24th. Urine contains four ounces of sugar; medicine continued.

29th. Urine contains five ounces of sugar.

Remarks.—I have reported the preceding case for many points of interest that it possesses. In the first place, it illustrates the early history of the disease. The association, at the commencement, with albumen, is probably accidental. The man's health was good till attacked by suppurative inflammation of the ear. The remedies for that affection prostrated his nervous system, and induced an attack of gout which he might otherwise have escaped. The albumen made its appearance in the urine from simple congestion and effusion from the kidneys, produced by their efforts to eliminate irritating materials. And these depressing causes united induced the presence of sugar in the urine in a patient, no doubt, already predisposed to diabetes. We believe this is the first case reported in which gout and diabetes have co-existed, and it is certainly an unusual event to observe uric acid crystals spontaneously deposited in saccharine urine.

Pathology of the Disease.—It is only of late years that any insight has been obtained in regard to the morbid processes that take place in diabetes, and it is needless in these remarks to go into any review of the untenable grounds that were assumed to prove its location to be in the kidneys. Bouchardat, following up Rollo's suggestion of there being an abnormal principle in the gastric juice not found in the healthy state which acts upon the starch of the food and converts it into sugar, made a considerable advance, but he did not embrace the whole matter. Both McGregor and himself, as well as other observers, ascertained that the matters vomited by diabetic patients contained sugar, whereas in healthy digestion no such result ensued; and they deduced, therefore, that the first step in the morbid chain started from the stomach. Had they examined all the available secretions of the same patient, they would have discovered that sugar was present in them all, for it is now well ascertained that in these cases it exists already formed in the gastric juice. For we ascertained, in the case here reported, that the presence of sugar may be very readily manifested in the matters vomited, when the previous meals consist of eggs and meat alone. Mialhe's theory, that diabetes is dependent on a neutral or acid state of the blood, needs only for refutation the fact that in every case of the disease where this fluid has been examined the reaction has been of its normal alkalinity, as we found it to be in the blood of the patient under consideration.

In regard to Professor Graham's experiments in University College Hospital, he is evidently wrong when he states that "the quantity of saccharine matter in the urine never exceeds the starch and sugar in the food." On referring to the first table in this article, it will be seen that from May the 15th to the 21st, a period of seven days, 2770 grains of sugar, or those substances capable of forming it, were taken as food, and then on the 16th and 17th only; and yet, 5765 grains, or more than double the quantity, were passed by the kidneys alone. This fact proves, what Bernard has already asserted, that sugar is eliminated by the kidneys even when none is taken into the stomach. And although Bouchardat and others are correct in stating that saccharine and

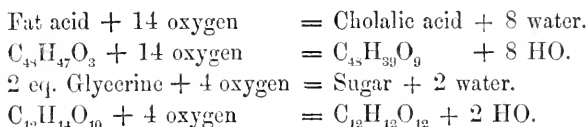
amylaceous food influence the amount of sugar in the urinary secretion, yet the fact stated above and supported by Bernard's previous experiments points to another, and in all probability a more important source for its production. In the July number of the *American Journal*, Dr. Donaldson, of Baltimore, has given in detail Bernard's experiments, proving the existence of sugar in the normal liver; and has detailed his series of experiments on animals, proving that this substance may be produced at will in the urine. We will examine further on the light that these facts throw upon the disease under consideration.

There can be no doubt that a portion of the sugar found in the various fluids and secretions of the body of a diabetic patient owes its origin to the amylaceous and saccharine elements of the food. We know that in healthy digestion, the atom of starch which subserves merely the purposes of respiration, and can by no process be converted into any of the animal tissues, during its elimination from the body goes through the following changes: starch, dextrine, sugar, vegetable acid, and carbonic acid. But from some stoppage in these changes the series is arrested at the sugar, which in this form is eliminated by the different excretory organs. What this arrest is, and where it is located, it is impossible in the present state of our knowledge to say, inasmuch as the only information we possess is the fact that when starch is taken into the stomach it is eliminated as carbonic acid and water; and we assume these intermediate stages to occur from knowing the changes that the same atom of starch would undergo out of the body.

We have long known, from the researches of Dr. Bensch, that the milk of carnivorous animals, fed exclusively on flesh, contained sugar of milk; and the announcement of the fact that the livers of the same animals kept on an animal diet, as well as those of the human subject living on ordinary food, also evidenced the presence of sugar, was not calculated to excite very great surprise. The fact, however, being now well established, we can no longer consider as tenable the idea so long inculcated, that animals had no power to create any organic principle found in their bodies, for it is here proved that sugar may be formed from nitrogenized materials. Bernard having ascertained that this substance existed normally in the right auricle of animals, traced it down through the ascending cava and the hepatic veins to the liver, beyond which point he was unable to discover it. Now knowing the fact that, if a small quantity of sugar be added to some freshly drawn blood and exposed to the action of the air, the sugar disappears, we can readily understand how this substance, thus proved to exist in the healthy animal economy, can be consumed in the lungs, so that no trace of it is perceptible in the urine. Bernard furthermore ascertained that this sugar, like other secretions, was dependent upon the integrity of the nervous system, and that, by irritating the different nervous centres, which he ascertained generally produced an increased quantity, he occasionally found it completely suspended. This may explain why it is

that the urine of diabetic patients frequently loses its saccharine character a short time before death.

It has been heretofore stated that the blood of the portal vein contains much more fat than the hepatic, the proportion being as 3.2 to 1.9; and as a very close relation between the elements of sugar and cholalic acid, the principal organic ingredient of bile, with glycerine and fatty acid, which together constitute fat, can be readily shown to exist, it would seem very probable, as M. Schmidt, a German physiologist, suggests, that this extra amount of fat going to the liver, may be transformed into sugar, and thus account for the presence of this substance in that organ. Thus:—



This would be very satisfactory; but, unfortunately in some respects for the theory, Bernard ascertained that this apparent excess of fat in the portal vein was due to regurgitation from the liver, where it is in reality formed; and that, if the portal vein be tied immediately on cutting through the abdominal parietes, instead of the fat being in excess, it will be found in less quantity than in the hepatic veins.

But that a certain relation does exist between these two substances, and possibly after the mode above stated, there can be no doubt; and the singular fact has been also stated by Bernard that, when the medulla oblongata is punctured, the amount of fat diminishes just in proportion as the sugar increases. In addition to this, M. Guillot states that, in diseases where there exists an interruption of the normal pulmonary circulation, such as is produced in phthisis and pneumonia, there is a quantity of fat found in the lungs which does not exist in other diseases. This will probably explain the cause of the fatty liver so common in phthisis; for were this circulation not permanently embarrassed, the fat would be deposited in the cellular tissue, or consumed in the lungs; but as it is, these organs not ridding themselves of it, it first saturates them, and the remainder, as it is secreted, remains in the liver. Hence the emaciation, which is wholly due to the want of fatty matter in the cellular tissue, which occurs in phthisis. On the other hand, the lungs, in diabetes, contain little or no fat, but large quantities of sugar; and although emaciation is one of the most prominent symptoms of this disease, yet the cause is different from that which produces it in phthisis. In the latter case, it is from the accumulation of fat in the lungs and liver; while in diabetes it is from the fat undergoing excessive oxidation, and being thus changed into sugar.

If, then, the facts just stated have any bearing, we are principally to explain the pathology of diabetes as being dependent on some derangement of the changes that ordinarily take place between the fat and sugar secreted in the

liver. To assert what this derangement is, would lead us too far into the mazes of barren speculation.

That the sugar produced by the liver should be consumed by the lungs, explains the connection between this disease and some pulmonary affections which are so often found to co-exist. Not that the one disease produces the other, but, when more than the usual amount of sugar is secreted daily by the liver, any accidental disease of the lungs, by interfering with their aerating power, prevents a certain amount of sugar from being consumed, and which must therefore be eliminated from the system without undergoing any change. That innumerable cases of diseases of the lungs occur without any connection with diabetes, and, moreover, that diabetes frequently takes place without any pulmonary complication, as in the two cases here reported, proves, without doubt, that deficient respiration, although occasionally acting as an exciting cause, bears, in reality, a very small part in occasioning saccharine urine; and that the presence of sugar in the secretions is not due to the fact of its being secreted in a normal amount by the liver, and remaining unconsumed in the lungs, but to its being formed originally in excess. Taking this view of the case, we should expect that the temperature of the body would not be diminished below that of a healthy man living on a diet excluding starch and sugar. And, in reality, such is the case in the present instance. The temperature of a man in full health, and that of one labouring under dysentery, were taken at the same time, by way of comparison. In the healthy man, the thermometer in the axilla stood at 98°, in the dysenteric patient 96°, while in the one labouring under diabetes it was 99°.

A statement made by M. Reguoso, to the effect that he has found sugar in the urine of various persons labouring under acute and chronic affections which disappeared after convalescence, has been published in most of the journals within the past few months. I can only say, in reply, that of the many hundred cases in which I have examined the urine with a view of detecting sugar, I never found it in a single instance that was not, either at the time, or proved subsequently to be, a case of diabetes. Having control of a hospital averaging from ten to twelve patients, I examined, for the space of three months, the urine of each patient, during his sickness, with this very view, and in no instance did I ever detect sugar.

In conclusion, then, to express in a few words the whole of our knowledge of the pathology of this disease, we say that in a state of health sugar is formed in the liver; that this sugar may be secreted when only azotized food is used; that in all probability it is formed from the fat which is also produced in this organ; and that it is then conveyed by the blood, together with any sugar that may have been taken in as food, to the lungs, and there eliminated in the form of carbonic acid and water. That in diabetes, from some cause at present unknown to us, an unusual amount of this substance is formed by the liver, more than the lungs can dispose of, the surplus passing off by the different excretory and secretory organs; and that although an amylaceous or

saccharine diet increases the quantity, yet abstinence from these articles of food will not prevent it from making its appearance in the urine and other excretions.

For many of the ideas herein stated we are indebted to M. Bernard, and we cannot but think that science is under great obligations to him for the satisfactory proofs he has given of the functions of the liver, so long a *terra incognita* to pathologists. Indeed, its importance as an organ of *sanguification* as well as *deuration* ought readily to be admitted, when we consider its large size in proportion to the rest of the body, and the complexity of its anatomical structure.

BALTIMORE, March 7, 1852.

ART. VI.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

January 12.—*Angina Pectoris.*—Dr. JACKSON exhibited the heart taken from a patient whom he had recently examined, and showing extensive ossification of the coronary arteries, without any other change excepting an atrophy of the ventricular portion of the organ; which last, as has been remarked by various writers, is probably owing to the diseased state of the nutrient vessels and the imperfect supply of blood. The case occurred in the practice of Dr. Webber, of Cambridgeport, and the patient was an old lady, 70 years of age, very fleshy, and had been subject, for five or six years, to paroxysms of great distress about the region of the heart, with numbness down the left upper extremity, lividity, and feeble pulse, obliging her to give up all active exercise.

The large intestine was loaded with fat, and, as frequently happens when this is the case, the mucous membrane formed numerous little herniary sacculi, many of them extremely thin, and some containing masses of indurated feces, as calculi are sometimes found in a sacculated urinary bladder.

At the next meeting, Dr. Jackson reported a hospital case that he had since examined, and in which the coronary arteries were ossified, but without any cardiac affection, so far as was known during life; though, after the patient's death, his wife reported, on inquiry, some symptoms that may have been referable to the heart.

Intussusception fatal, without complete Strangulation.—Dr. SNOW exhibited the parts, and read a full history of the case sent by Dr. COTTING, of Roxbury, in whose practice it occurred. The patient was a healthy male infant, six months old. On Thursday, P. M., the 8th inst., it had two small, loose dejections, with traces of blood; about midnight, a large, loose, mucous, and bloody dejection; and towards morning another, without pain. On Friday morning, Dr. Cotting found it slightly unwell, with restlessness, nausea, and occasional distress, which was referable to the bowels. Hyd. c. creta was given; and, for the night, Dover's powder. On Saturday morning, the distress had greatly increased, but without any marked heat,

tenderness, or fulness of the abdomen; slight retching; no dejection; restlessness and thirst greater, and pulse very rapid. Half an ounce of castor oil was given and retained. At 2 P. M., it was found moribund, gasping, and gagging. Had had a pretty large fecal and bloody dejection between 10 and 11 o'clock, after which the abdomen began to swell, and became greatly enlarged. Intussusception was diagnosed, and several attempts were made to force water up into the bowels, but without effect. Just before death, which occurred at 6 P. M., it threw off a little thin liquid, but it could hardly be called vomiting; and this was the only time that anything was thrown from the stomach during the attack. Neither was there ever any proper tenesmus; though throughout the last day there was very frequent and sudden action of the abdominal muscles, a sort of incomplete, abruptly-terminating strain.

On dissection, the ileum was found to have passed through the cœcum and into the ascending colon; the whole lying about over the right kidney, and red from increased vascularity, but soft, and so far from being strangulated as to be withdrawn by very slight traction. Appendix cœci scarcely involved. Upon the inner portion of the intestine, Peyer's glands were as much developed as in typhoid fever, being quite soft, with some red points and some lymph upon the surface, which was very irregular; the mucous membrane itself being not remarkable. Upon the middle portion the mucous membrane was moderately red and rugous for about half its extent from the free extremity, but without much mucus, and with no blood or lymph. The passage through the intussusception, before it was withdrawn, seemed sufficiently free; the intestine above being filled with liquid, and that below comparatively empty.

Disease of Knee-joint, of twenty years' duration—No treatment during that period—Amputation.—Dr. H. J. BIGELOW showed the specimen, lately removed by him from a young man who had gone about with it nearly all his life, suffering, comparatively, but little pain. The cartilage had undergone the so-called "pulpy degeneration," and, in several points, the bone was denuded. Dr. B. remarked that, previously to amputation, he had spoken of the occasional deceptiveness of the fluctuating feel, as indicative of the presence of fluid; but he had not supposed it deceptive in *this* case. On examination, however, no fluid was found; but a *deposit of fat*, infiltrated with serum, existed between the patella and the tibia, two and a half inches thick, and by this was the fluctuating sensation caused. The patient is now well, with good union of the stump.

Dr. Bigelow also reported the two following cases, and exhibited the specimens:—

First. *Peculiar fusiform tumour occupying the whole left thigh.* The patient was a female; the swelling, twenty-four inches in circumference at its largest part, gave to the touch a sense of ascitic fluctuation; its surface smooth; originally small, it had existed for seven months, with but slight pain.

Exploration by acupuncture furnished two teaspoonfuls of watery blood; a few days afterwards, a small incision made in the lower portion of the swelling allowed the finger to reach a mass of a placental feel, and a jet of blood, and then coagula, followed its withdrawal.

There had been little doubt as to the existence of encephaloid disease, but no indications of this were detected by microscopic examination. After the above operation, the patient, previously much reduced, suffered an increase of an inch in the tumour within twenty-four hours, and died during the subsequent week. The *post-mortem* appearances were: 1st. A sac filled with

blood and coagula, the before-mentioned fusiform swelling. 2dly. The femur, stripped nearly bare of muscles, was abraded in one or two spots near the trochanter minor, and a small hole was discovered, piercing its shaft, the medullary cavity highly inflamed throughout, and traces of inflammation running into the cancellated structure of the femoral extremities. No free pus discovered.

Dr. JACKSON remarked the apparent encephaloid nature which one portion of the discharged material exhibited.

Dr. BIGELOW replied that this had been carefully examined by him under the microscope, and that it was concrete pus.

Dr. INCHES mentioned a case, somewhat analogous, arising from over-exercition of the limb; the swelling fusiform; pus was finally discharged. The patient is now thought to have necrosis.

Secondly. Dr. BIGELOW presented a specimen of *Osteoid Cancer of the Femur*, taken from a man of 22 years, who, while going up stairs, "felt something give way," and soon after noticed a tumour in the ham, which grew rapidly, but was without pulsation. Leeches applied by the patient were ineffectual. Dr. B. saw him in the country, and, pronouncing the disease malignant, advised amputation. Previous exploratory incision detected cancerous tissue. The operation was done. This tumour, like the former, was fusiform; no disease of the knee-joint.

On sawing the bone, Dr. B. found what he had never previously seen in the recent state—true osteoid cancer; a mass of friable, porous, fine structure, corresponding in appearance to pumice-stone; its consistence chalky.

This disease has been known to return upon the system as bone, in various organs, as the lungs, veins, &c. Dr. B. pointed out a nodule of encephaloid matter in sound medullary tissue, half way up the shaft of the femur, which showed the mode of return and propagation of the disease in the continuity of a bone.

Incisor Teeth from the Lower Jaw of a newly-born Child.—Dr. GOULD presented these, which were loose in the jaw, and, causing irritation to the child's gums and to the mother's nipples, were removed.

Dr. G. said that Dewees mentions having seen but one case of the kind. It is stated that children born thus are short-lived. The teeth, in this instance, are of the size usually observed in children of 18 months.

Decidua in an Unimpregnated Uterus.—The case occurred in the practice of Dr. GREENE, who was called to the patient when she was in a state of stupor, having taken, it was said, about an ounce of the oil of tansy, and from the effects of which she soon died. She was about 25 years of age, a woman of dissolute habits, and, according to her sister's report, considered herself pregnant, as there had been vomiting, with suppression of the catamenia, for the last three months. Besides the large dose of poison, there was reason to suppose that she had been taking smaller doses occasionally during the last month.

The dissection was made by Dr. Ainsworth, and the parts were exhibited to the Society by Dr. Jackson. The uterus is not enlarged, but there is the vascular and softened, or rather flaccid condition that belongs to the gravid state. The body and fundus are lined by a decidua, which Dr. J. remarked upon as perfectly resembling that which he has found in at least three cases of early pregnancy. This structure is evidently a change to some depth of the inner surface of the organ, and not a newly-formed membrane; being two

lines or more in thickness in the body, and becoming quite thin at the fundus and towards the cervix, at the upper limit of which last it terminates. It has a pulpy look and feel; an appearance, upon the cut surface, of very delicate and perpendicular striæ; and upon the free surface the punctated appearance that characterizes the true decidua, and that is seen so frequently upon the fragments of this structure that come away with the ova, in the case of early abortions. A single incision has been made through the organ by Dr. A., but nothing like an ovum has been discovered.

The left ovary is large, flaccid, and contains a spurious corpus luteum about the size of the top of the forefinger; *i. e.* a mass that consists mainly of coagulated blood, and is surrounded by a buff-coloured disk. The blood is not quite recent, judging from the consistence and colour, which last is not quite uniform. The colour of the disk resembles that of the true corpus luteum; but it is less lobulated, and varies in thickness, at different parts, from an almost inappreciable thickness to not more than half a line; there is, moreover, no appearance of a lining membrane within it. A well-marked serous cyst is also seen, of an oval form, and equal to one-third of an inch in diameter; this contained an old, brown coagulum, but there is no trace of a buff-coloured disk about it. The other ovary is in a perfectly normal and passive state; and in neither of the two organs is there anything like a true corpus luteum. The left Fallopian tube is completely obliterated by old adhesion just at its fimbriated extremity, so that impregnation of the corresponding ovary could not possibly have taken place; the mucous surface being of a deep red colour, and smeared over with a whitish puriform fluid. The other Fallopian tube is quite normal.

Encephaloid Disease of the Peritoneum. Hæmatoid Variety.—Case reported by Dr. PERRY. The patient was a large, fleshy, and healthy woman, 63 years of age; had been ailing for about one or one and a half years, but without any marked symptoms. Attended to her domestic affairs until three months ago, when the abdomen was found to be enlarged, and she was thought to be dropsical. Three weeks before death she was taken with dyspnoea and distress in the chest, and sent for Dr. Perry. The abdomen was enlarged as in the latter months of pregnancy, and fluctuated very distinctly; the lower extremities were œdematous; the complexion had a pale, sallow hue, and cancerous disease in the abdomen was diagnosticated. The dyspnoea recurred in frequent paroxysms, and in one of them she died; no especial cause being found for this symptom.

The dissection was made and reported by Dr. Jackson. The peritoneal cavity was filled with tumours, growing as it were from the membrane, and without involving the subjacent parts; varying, generally, from the size of a pea to nearly that of the fist; more or less pedunculated, and of a well-marked encephaloid character. The largest were more or less mixed with liquid blood; this and the pulpy encephaloid were, in some of them, in about equal proportions; and in two or three cases nothing whatever was found but a cyst filled with blood. The most prominent object, however, was a large cyst in the middle of the abdominal cavity, probably not less than a foot in diameter, and containing by measurement eleven pints of dark-coloured and perfectly liquid blood. The parietes of this cyst, which had generally but a slight connection with the surrounding parts, were dense and averaged nearly a line in thickness, with some thin layers of encephaloid upon the outer, and some upon the inner surface. There was also upon the inner surface a coarse, friable, granular deposit, varying from two to four lines in thickness; many

parts, however, were nearly or quite free from it: this was probably coagulated blood, and with this exception, and a small coagulum in one of the other tumours, there was not a trace of coagulum to be found in any one of the masses. Encephaloid disease was also found in the liver, but in no other organ of the abdomen or thorax. There was no ascites, which so generally accompanies this form of carcinoma.

Dr. BACON, having taken some of the liquid blood for examination, found granular exudation-corpuseles and irregular masses of granular matter, in addition to the usual corpuseles, but no coagula of fibrin, the blood-disks retaining their normal shape. The blood is feebly acid, but no signs of coagulation are obtained by neutralizing it with ammonia. Amount of albumen sufficient.

January 26.—Material contained in a Tumour upon the Thigh of a Boy—its Character, &c.—Dr. H. J. BIGELOW showed some of the contents of a swelling upon a boy's thigh, which came on after carrying a heavy burden that rested continuously for some time upon the spot where the tumour subsequently appeared. The affection was of three weeks' duration. The material exhibited was almost exactly the same in appearance and characteristics as that shown by Dr. B., at the last meeting, from the thigh of a female patient. The masses, looking like encephaloid matter, were undoubtedly pus mingled with coagulated blood; there was no malignant disease; the bone, at the seat of the swelling, was denuded; the popliteal artery laid bare. When the tumour was first opened, fluid blood first issued, then coagula.

Dr. BIGELOW also presented to the Society's notice a *fibro-plastic tumour* which grew from the anterior walls of the abdomen, and resembled in shape a long Carolina potato. Situated near the inguinal ring, it was not connected with it; it was hard and knobbed. Extirpation advised and done. Throughout its whole extent, the mass was very closely adherent, and held in a network of tissue similar to its own, the cells of both being exactly alike. This latter fact explains the occasional reproduction of such growths, after extirpation. The nutrient vessel was on the side of the skin. Two beautifully executed drawings of the tumour, *in situ*, and after removal, and also some microscopic delineations of the cellular structure, were shown by Dr. B., with the specimen.

Dr. BIGELOW likewise described the following case, intending to show the specimen at the next meeting:—

Necrosis of the Maxillary Bones; of the Nasal Plates; and of the Sella Turcica, resulting from the Fumes of Phosphorus.—In March last, a man with an immensely swollen lower jaw, and highly inflamed tongue and gums, presented himself to Dr. Bigelow for advice; diagnosis difficult. Leeches were ordered. Dr. Bigelow left town soon after for Europe, and in a fortnight after, Dr. Gay saw the patient. The parts affected had now opened, and a probe detected dead bone. The man entered the Massachusetts General Hospital, his health continuing to fail; remaining awhile, he left, to re-enter, some time afterwards, and was found there by Dr. B. on his return.

In December last, drowsiness supervened, and, finally, a comatose condition, lasting for three days, when death occurred in January. *Post-mortem* examination discovered the lower and upper maxillæ extensively necrosed, the nasal cavity invaded by the same disease, and also the sella turcica. The meninges inflamed; the arachnoid opaque near the sella turcica. The patient had been engaged in the fabrication of friction matches, and thus exposed to the fumes of phosphorus, which at last caused the disease.

Dr. Bigelow said this was the first case of the sort he had known to occur here. It has been reported in Europe.

Degeneration of a Fibrous Tumour of the Uterus, with Encysted Disease of the Ovary.—Case reported by Dr. STEDMAN. The patient was a married woman, 45 years of age, and died of some pulmonary affection, having had no symptoms of uterine disease. She was confined, for the last time, six years ago, and then had twins. Menstruation regular, nearly till the time of death; occasionally very scanty; and when this was the case, she usually had hæmoptysis.

The tumour is about one inch and three-fourths in diameter, quite defined, surrounded by a cretaceous shell, and has throughout a dead, yellowish-white, opaque appearance, with some brownish discoloration. It is rather dryish than otherwise, and quite as dense as any fibrous tumour, though the fibrous structure is less marked than it usually is.

No trace of the left ovary is seen; but in the place of it is a thin and simple serous cyst, nearly two and a half inches in diameter. Upon the other side is a collection of cysts, forming a mass nearly twice the size of an English walnut, upon the surface of which the thin, flattened, dense, atrophied remains of the ovary are spread out.

Dr. Jackson remarked upon this change of structure in the fibrous tumour as the result of an arrest of growth, and probably of atrophy; he has met with the appearance three or four times, but has never seen it described. The condition of the ovaries he thought remarkable, in connection with the persistence of menstruation.

Anomalies of the Arteries; Brachial, Thyroid, and Renal; all from the same subject.—Dr. KNEELAND showed these specimens, consisting of high division of the radial artery on each side—on the right, from the brachial, on the left, from the axillary artery; the brachial artery dividing at the elbow into ulnar and interosseous; the middle thyroid artery, given off from the arteria innominata, running up the median line of the trachea; this is important, as in the operation of tracheotomy it might be wounded. The kidney of right side had two renal arteries; the left kidney normal. The specimens were all from a boy about five years of age.

Syphilitic Disease of the Eye. Cases reported by Dr. BETHUNE.—CASE I.—Mrs. D., 40. Health good till one and a half years ago, when an eruption appeared on the skin, considered by her medical attendant to be syphilitic, both from its appearance and from other circumstances, though an exact history of her primary symptoms could not be obtained.

One year ago, she was attacked with inflammation in both eyes. She recovered from this with the exception of a weakness of the eyes, which still existed in a degree when, four weeks ago, the *left* eye was attacked with pain, redness, &c. Of late the pain has abated. She has taken mercury for this attack, so that the gums have been much affected, and still continue sore. Now, on examination, remains of copper-coloured eruption on arms and body; *right* eye well, except the slight weakness above-mentioned; *left* eye cloudy, pink injection around cornea, surface of cornea quite dry, and lining membrane appears somewhat darker than *right*; pupil of moderate size, does not respond to the influence of light, but is nearly regular, and appears free from lymph. The sight is so much affected that she cannot distinguish objects.

Treatment.—Vesication in the vicinity of the eye, the external application of

stramonium, tepid lotions, and the internal use of hydriodate of potash, which was gradually increased to 30 grs. a day. Under this, the moisture returned in great part to the surface of the cornea, the cloudiness of the lining membrane nearly disappeared, the vascularity of the eye much abated, and the pain left her, but the sight did not improve. The pupil was now distinctly seen to be perfectly clear, but it remained immovable. On the 31st, the hydriodate was omitted, and her general health being improved, she imprudently exposed herself to cold, and the inflammation returned in the eye, though much less violently than at first. This having partially subsided, she wished to return to the country, and Dr. B. recommended her physician to try the effect of Fowler's solution, not going beyond grs. v, three times a day, after the present inflammation should have left the eye.

On the 27th of January, her attendant informed Dr. B. by letter that her sight had so much improved that she could distinguish objects at a distance of six or eight feet. There was still some opacity of the internal surface of the cornea—and she had had a fresh eruption on the left hand, mostly of the character of syphilitic acne. Dr. B. advised that the solution which had been suspended a few days should be again given, and the dose gradually increased to grs. x.

CASE II.—Mrs. S., about 30, was attacked with primary symptoms nine months ago. Eruption first appeared three months after. Now, December 30, has severe syphilitic ecthyma on lower limbs. Three months ago, left eye was attacked with inflammation, which one month ago resulted in total loss of sight. Has had much severe pain in and around eye, from which she still suffers, also from periosteal pains in the tibiae. The globe appears generally but unequally swollen; chemosis; a small purulent deposit is seen under the conjunctiva, near outer edge of cornea; the cornea hazy; the pupil apparently closed by lymph, and the iris pushed forward nearly in apposition with the cornea. Between these textures are several small purulent collections similar to that under the conjunctiva. The sclerotic projecting at points shows the choroid through. The upper lid is swollen, and droops.

Treatment.—Under the care of the gentleman with whom Dr. B. saw her, she had been taking the mandrake (*podophyllum*) for a short time, with apparent benefit. It was agreed that it should be continued, and Dr. B. also urged the free use of the hydriodate of potash; likewise the occasional application of two or three leeches near the eye, and the vapour of anodynes. Under this, as her physician stated, two or three weeks after, she had improved somewhat in her general health, and the pain in the eye had diminished. At the upper part of the ball the swelling had increased; as it seemed not improbable that this depended on a purulent collection between the deeper-seated textures, Dr. B. advised an incision at this point if the enlargement continued.

Dr. B. added that in syphilitic disease of the eye, as is well known, the iris is the part usually most affected. This membrane was involved in both these cases, but not more than, if so much as, some of the others. On this account he thought these cases worthy of mention.

February 9.—*Cases of Fever; Diagnosis difficult.*—Dr. SHATTUCK, Jr., reported the following cases, which he considered of interest on account of the difficulty of diagnosis. He asked, Must the first be considered a case of typhus, or ship fever, as it appeared when first seen, and as one might be led to conclude from the results at the autopsy? The patient was a stout muscular Irishman, thirty-two years of age, a resident of this country for three years. He had worked on a farm in Watertown. He had not been with sick persons, but

attributed his illness to a habit of washing his person very freely in cold spring water when heated. In the latter part of September, he had a bad cough, pains in his limbs, dizziness, and on the 13th October, he gave up work, having lost strength, and went to board with a family in Watertown, who came to this country at the same time with himself. He had a bad cough—expectoration free, offensive; dizziness; he was in his bed a part of the day, but sat down to meals with the family, and ate some hearty food every day, and walked out every day. He complained also of pain in the chest, and consulted Dr. Whittemore, to whom he seemed labouring under a bronchial affection. A moderate drinker, he took some spirit every day; submitted to no medical treatment; his cough gradually diminished, his strength returned, when, early in January, he exposed himself at night to cold and wet when under alcoholic and other stimulus. His symptoms returned; a petechial eruption over his body was noticed by his host a few weeks before this relapse, when a woman and a child of the family had an attack of mild fever, and were sick for two or three weeks. Dr. Whittemore regarded their disease as continued fever, but spoke of it as petechial fever, not being in the habit of using the terms typhoid and typhus as distinctive of varieties of continued fever. The man did not improve, though he continued to walk out, to sit at table with the family, lying down at intervals in the course of the day. Dr. Whittemore saw him a second time, and at his request wrote a letter to the admitting physician of the Massachusetts General Hospital. In this letter he says: "As respects the nature of his complaint, I can only say, he has had cough for three months or more, and it has most probably arisen from neglected bronchitis. The cough, while I am writing, has occasioned expectoration of frothy mucus with a provocation to vomit, with exhaustion of the strength and with some hemorrhage from the nose." The patient rode to Boston, and entered the hospital on Monday, Feb. 2. On Tuesday morning, at the time of the visit, he was sitting by his bed, dressed, his intellect quick, his memory impaired, mind disposed to wander; he gave for the most part satisfactory answers to the questions; the eyes neither injected nor suffused; the hearing good; prostration; rather a dusky hue of the skin, and an abundant petechial eruption over the trunk and limbs; the pulse 120; the skin dry; cough; respiration hurried; resonance diminished over both lower backs; less over right, where the respiration was feeble and rude. Over front chest resonance sufficient; expiration prolonged under both clavicles; no pain in side; expectoration of viscid mucus, with one or two rusty sputa; abdomen rather full, not tender on pressure; gurgling in right iliac fossa; several dejections, the patient having taken, for two days, cathartic pills. The tongue dry, no sordes on the teeth; thirst. He was put on gruel, and took pills of opium and carbonate of ammonia. He was restless and delirious at night, getting out of bed and going to the water closet, and two of the attending physicians of the hospital considered the aspect of the case so decidedly that of ship fever, that he was put in a small ward where no patients would be exposed to him. He then had beef tea and brandy punch at regular intervals. Subcrepitant rale was heard over the right lower back; in other respects the physical signs continued the same; the prostration became greater, and he died in the evening of the 5th. The autopsy was made forty hours after death. There had been but little emaciation; the cellular tissue under the skin of the abdomen loaded with fat, the petechial eruption still distinct; slight and old adhesions of both lungs; both of them congested, of a very dark colour; no hepatization, the anterior parts and edges being the only crepitating portions. The mucous membrane of the trachea and of the primary bronchi was of a dark, livid colour, some aerated serum and mucus, the contents of the bronchia; the

spleen large, of a dark colour, the two substances of the kidneys quite distinct. The mucous membrane of the stomach and intestines not remarkable. Peyer's patches not diseased. The liver weighed four pounds.

Diagnosis is often difficult where we do not have a patient under observation during the whole course of the disease. If this man had continued fever, it is remarkable that he never should have been confined to his bed, and that he should have been disposed and able to eat solid food during the whole course of his illness, a period of nearly five months. If he had typhus fever, it must have been an idiopathic case. He and his friends asserted positively that he was never exposed to sick persons. The man with whom he boarded spoke of his expectation, when he came to his house in October, as very offensive. Had he gangrene of the lungs at that time?

The second patient was a muscular Irishman, 28 years of age, who landed in New York on the 1st of March, after a voyage of six weeks. There was no fever during the voyage, but two of the passengers had fever after landing. He was perfectly well for a week, and then was taken with chills, headache, loss of appetite, nausea—and remained in the house, but was not confined to his bed. On the 8th day, he walked to the hospital, and was seen for the first time on the 17th of March. Some headache, prostration, mind slow, not capable of prolonged effort. He had bled from the nose twice; disturbed, restless sleep; pulse 90, skin hot and dry, tongue dry, abdominal fulness and tenderness; gurgling in right iliac fossa; three loose dejections from 3ss of castor oil. Numerous rose spots over trunk and thighs, some on arms. He took ten grains of Dover's powder every four hours during the first twenty-four hours, and the same dose every three hours during the second twenty-four hours. He had one or two loose dejections; there was somnolence—the skin moist. The rose spots became of a darker color, and faded less on pressure. The prostration increased. He was put on brandy and beef tea at regular intervals on the 22d, and died on the 25th, the 18th day of the disease. The friends forbade an autopsy.

Ought not this case to be regarded as one of typhoid fever? The eruption and the abdominal symptoms are characteristic of that disease, and yet, perhaps, all would not consider this diagnosis as correct. The opiate treatment seemed to be without effect. Would the larger doses, as administered by Dr. Henry, of Springfield, Illinois, have been of efficacy to arrest or modify the fever?

Fibrous Tumour of the Uterus.—The specimen was shown by Dr. JACKSON, to illustrate the change of structure that may, after a long while, take place in these cases. The patient was 84 years of age, and had had swelling of the abdomen for more than thirty years. The tumour had no appearance of fibrous structure to the naked eye—though it was evident enough microscopically—but rather that of a uniformly and brilliantly white, glistening, and very flaccid, though tough cellular tissue; the cut surface being irregular rather than smooth, as it usually is. The mass, as received from the country, was of a semi-spherical form, six inches in diameter, three inches in thickness, and invested over its whole convexity with a thick, cretaceous shell.

Dr. J. also showed a recent uterus, in the cervix of which was a fibrous tumour about one and a-half inches in diameter; and remarked upon the extreme rarity of these tumours in this situation, so far as he had observed. The patient died of acute pneumonia, and the situation of this disease was also peculiar; the middle and the greater part of the right lower lobes being hepatised, whilst the back and especially the lower back part were healthy.

Ovum retained fourteen months.—Dr. JACKSON exhibited the specimen which he had received from Dr. Edwin Leigh, of Townsend, with the following account of the case: The patient was 42 years of age, and had borne six children; general health delicate for many years; and for the last three years, since a miscarriage, she suffered from prolapsus uteri.

In the winter of 1850–51, she became pregnant, as she supposed. The catamenia ceased on the 8th of December, and have never regularly returned since that time. In February, there was morning sickness. Swelling and hardness of the breasts, but no pain; the swelling beginning to disappear in May. No quickening. Some fulness in hypogastric region, but this did not increase after the fourth month, and about the sixth month it diminished. During the first six months there were more or less hard and bearing-down pains.

In June, 1851, there was some uterine hemorrhage for a few hours, and during the following week a little very dark discharge; after which there was another hemorrhage with a similar discharge, which continued for the next twelve days. In September, October, and November, there was, on three or four different occasions, a slight discharge, lasting for a week or more at each time; very dark, sometimes quite thick, and often appearing like a dark, dirty, semi-fluid unguent. Discharge never purulent. Some pains, referred chiefly to the sacrum, during these months, but less than in the winter and spring. Uterus somewhat enlarged, and with greater irritability and tenderness than was usual during the few preceding years; os tinæ rather enlarged. The case, it was thought, might be one of false conception, and so the result proved.

About the 18th of December, she had very considerable hemorrhage, with some pain, and followed by leucorrhœa; attributed to hard work. Ten days afterwards, a similar attack. About the 18th of January, 1852, severe pains came on and increased, with considerable hemorrhage, until the 22d, when the ovum was discharged.

The mass was of a regular oval form, four inches in length, and two and a half inches in diameter. Externally it had the usual appearance of a retained ovum; and, a section having been made by Dr. L., it was seen to consist of a whitish, opaque, ill-defined tissue, with some remains of the chorion, fibrin from blood that had formerly been effused, and numerous little cysts. There were also numerous cavities, from one to three or four lines in diameter, of an irregular form, and having a serous-looking surface within, though they did not appear to be cysts; in some of these were small, granular, cretaceous bodies, not unlike minute phlebolites.

Case of Laryngitis reported by Dr. ALLEY, occurring in the Charity Hospital, N. O., under the care of Dr. WEDERSTRANDT.—An Irish emigrant entered the hospital, labouring under severe symptoms of laryngitis; reports that he has been suffering, for two weeks, with the complaint which now threatens to prove fatal.

The treatment was general bleeding, tartar emetic, and the remedies usually resorted to in such cases.

The disease was thought to be œdema of the glottis, and confined to the larynx. In spite of the best directed efforts, the patient gradually grew worse, his breathing became more difficult, the air entered his lungs by a long wheezing inspiration; he sat upright in bed, pointed to his throat, laid his finger upon it, and prayed earnestly for relief by signs and in a feeble whispering voice. There were intervals of ease, after which the paroxysms of dyspnœa would

return with much greater intensity, and threaten him with immediate suffocation.

One morning, between one and two o'clock, Dr. W. was summoned to his bedside, with the notice that, if he did not go quickly and operate, he would find the man dead. He took his case of instruments and tracheotomy tube, and hastened to the ward. Scarcely had he entered the ward before the nurse exclaimed, "Dr. W., the man is dead!" On reaching his bed, the man appeared like one who had breathed his last; he lay still and pale, his lips blue, yet there was a perceptible pulse, and the action of the heart, though feeble, was not arrested. The loss of a moment would have been fatal.

An incision was made into the trachea just below the cricoid cartilage, and enlarged with a probe-pointed bistoury. The lungs were inflated by breathing into the artificial opening, and the chest compressed with the hands so as to imitate the natural mode of breathing.

In a little while the patient began to breathe, and looked around like one awaking out of a deep sleep. He was told how to clear his throat of the mucus and blood, which constantly collected in it, by closing the wound after a deep inspiration, and then either by coughing or making a strong expiration whilst the artificial opening was closed by the finger. When the bleeding had ceased, the tracheotomy tube, figured in the plates of Liston and Ferguson, was introduced, but worked so ill that it was found necessary to dilate the wound with a pair of dressing-forceps, the handles of which were kept apart by a wooden stretcher, and the instrument held by a piece of tape fastened around the neck.

An hour after this, bleeding returned, and the patient was nearly suffocated. He was then raised by the heels, struck smartly on the back several times, and a clot of blood was disengaged from the throat, moulded into the form of the trachea. From that time the patient did very well. In a few days he was able to bear the tube, and could walk about the house and in the yard. Nevertheless, it was found that he could not dispense with the tube after the acute inflammation had subsided, and no cedema of the glottis or epiglottis could be felt with the finger.

It was thought that there might be some ulceration of the larynx. The tube was removed, and after the practice of Dr. Horace Green, of New York, the nitrate of silver was applied. He was also subjected to a mercurial course, but all in vain. It was found that any foreign substance introduced upwards into the larynx gave rise to a violent cough and spasm of that organ, whilst the introduction of the same downwards and into the trachea produced no such result.

The man remained several weeks in the hospital, and then took his discharge. One thing worthy of note is, that the tubes, though of silver, were rapidly corroded by the secretions of the larynx and trachea, and required often to be renewed. Several months elapsed after the patient left the hospital before he was heard from again. He called, one day, in fine health and spirits, and said that he worked daily on the levee. A year had passed away since the insertion of the tube.

Six months after he called at the hospital, he died under very peculiar circumstances. He had worn the tube until the soldering had softened between the body and rim of the tube. In an unlucky moment the body of the tube fell into the trachea beyond the reach of his fingers. His ignorance of anatomy induced him to push it still farther down with a quill, hoping, as his friends say, that he could push it into his stomach. No effort was made at the time to extricate the tube, and the man died after much suffering. On examination

after death, the body of the tube was found occupying the right bronchus—the lungs were both in a state of sanguine congestion as in the first stage of pneumonia; the right side of the heart was distended with blood, the left comparatively empty. The glottis and larynx were extremely narrowed as if by a stricture, and could not be dilated without laceration; the result, probably, of bygone inflammation.

Dr. W. reports also a case of œdema of the glottis in a patient upon whom he operated for tracheotomy. The patient speedily recovered after wearing the tube one week. The same operation has also been performed successfully by Dr. Warren Stone, and by Dr. Barnes, of New Orleans.

February 23.—Lupus.—Dr. DURKEE exhibited a case of this disease. The patient was a female forty-five years of age. In July, 1849, a hard pimple appeared upon the right cheek near the inferior border of the malar bone. When first noticed, it was about as large as the head of a pin. In a few weeks, several others appeared in the immediate neighborhood of the first. Now, the tubercles are mostly in juxtaposition, and occupy about two-thirds of the integument covering the cheek bone, and extend a few lines towards the upper lip and nose. They are of a dingy-red colour. Some of the tubercles are now half the size of a common pea; others, of more recent origin, are smaller. Patient has enjoyed good health, except that for a short time past she has been troubled with indigestion, and the tongue is now deeply coated, and the bowels constipated.

Dr. D. remarked that lupus presents three principal varieties: the first has respect to the extent of surface implicated; the second to the depth to which the morbid action penetrates the chorion; the third, where the disease is accompanied with hypertrophy, is what the older writers denominated the true *noli me tangere*. Sometimes all the varieties exist in the same subject. The causes of lupus are for the most part very obscure.

The present case is exhibited, not because it is a remarkable one of its kind, but because the disease itself is rare in this country.

Although two and a half years have elapsed since the first tubercle was developed, yet the diseased surface is not now larger than half a crown; and it still preserves its original type. The tubercles have undergone no change since their first appearance, except a very slow augmentation—and quite recently a delicate squamous covering has appeared upon the summit of some of them; the patient has been somewhat annoyed with itching in the affected skin. During the last six months, the diseased spot has increased in size more than it did during the first two years. There is a patch of the same disease on the dorsal aspect of one of the ring fingers. Here it has a close resemblance to psoriasis. The skin is much thickened. The portion of skin affected upon the finger is about the size of a ninepenny bit.

Dr. D. proposed to treat the disease locally, as he could hardly suppose that any constitutional remedies would be of service. He remarked that he should endeavour to improve the general condition of the patient—but that he should trust to local remedies for the removal of the cutaneous trouble, and that he should commence with the application of the saturated compound tincture of iodine; the formula for this preparation of iodine is not in the dispensatories. It is made by dissolving as much as possible of iodine and iodide of potass in spirit. When applied freely twice a-day, it will soon produce a slough.

Dr. D. stated that he had recently treated a case of lupus of twelve or fifteen years' duration, successfully, with topical remedies only. The case was

a more interesting one than that now presented to the Society. The disease had extended over a surface three times as large as in the present case, and there had been a very trifling ulceration for some years. The cicatrix left after the curative process is complete is quite peculiar. The surface has a delicate blue tinge; the integument is extremely thin, and slightly rugous.

Rare forms of Cyst.—Dr. HENRY J. BIGELOW exhibited and described a specimen of the *oleaginous cyst*. This is the only one he has ever seen. On puncture, a bluish-white, milky fluid exuded. The sac is membranous, the fluid is oleaginous. Dr. B. spoke of the different forms of cyst: the *gaseous cyst* developed in the human subject—the parallel of Hunter's case of cyst in the omentum of the pig; the *serous cyst*. Six weeks ago, Dr. B. saw a child who presented a swelling on the left side of the neck of three weeks' standing, and which he regarded as the earliest stage of hydrocele of the neck; on incision, three to four ounces of limpid serum were evacuated. Dr. B. showed two drawings of the latter cyst, *in situ*; the integuments were healthy; the child three months old. A drawing of the oleaginous cyst was also shown.

Resection of the Head of the Femur. Dr. HENRY J. BIGELOW.—The subject of this operation was a boy between nine and ten years old, some time at the hospital, with disease of the hip-joint. The operation was done on Saturday last. Dr. B. intended exsection of the head of the femur; on the application of the chain-saw, a portion of the bone came immediately away, at the first traction of the instrument. This piece is seen to be carious, and as if infiltrated with tubercular deposit. Much pus issued from the wound; the bone denuded and carious.

When first seen by Dr. B., three months since, there was a swelling over the coxo-femoral articulation of the size of a cocoa-nut, and complete dislocation of the femur upon the dorsum ilii. Dr. B. reports the patient quite comfortable after the operation; cold water applications to the parts are grateful. The operation, in itself, he thinks will not prove more detrimental than the spontaneous opening of this large abscess; he had undertaken it because it is stated that, resection being practised, the disease of the socket gets well; he did not know why this should be.

[At the next meeting, March 8, Dr. Bigelow showed the bones composing the hip-joint of the above patient, who died twelve days after the operation, having been as comfortable as previously, and the pulse having been unaltered for three days. Death did not occur from the operation, *per se*, but from the effects of admitted air into the abscess, which, sooner or later, must at any rate have happened, decomposition of the purulent contents ensuing.]

In connection with the above case, Dr. J. B. S. Jackson mentioned an instance of fibrous reparative formation, after resection—a strong and efficient limb resulting; the case being similar to that reported by Dr. Bigelow.

Apoplexy.—Dr. JACKSON reported a case of extensive effusion of blood into the pons Varolii. The patient was a man forty years of age, and of rather a slender figure. About 10 A. M. on the 17th inst., and whilst in his counting-room, he complained of a darting pain through one eye; his countenance changed, and he was thought to be faint, but in about fifteen minutes he had a convulsion, and from that time remained insensible until his death, which occurred between one and two o'clock in the following night. Was visited by a homœopathic practitioner, who reported that the con-

vulsions continued until 3 P. M., and ceased after the use of a shower-bath, and the application of wet sheets; pulse 100; pupils about natural. The effusion extended into the crura cerebri and somewhat into the pia mater, but not into the ventricles.

At a subsequent meeting, Dr. HOMANS reported a case of very extensive effusion into the cerebellum and ventricles, complicated with renal calculi.—The patient was a large, fleshy man, fifty-eight years of age, and intemperate in his habits both in regard to eating and drinking. The attack came on at 5½ P. M. with very severe headache, and it was with great difficulty that he was got home; soon became quite insensible, and continued so for five hours, when he died. There was stertor, and apparently perfect paralysis, but no convulsion; pulse full and strong; pupils of the eyes greatly contracted and perfectly immovable. The dissection was made by Dr. JACKSON, who reported an effusion into the cerebellum and fourth ventricle of 3iiss, by estimate, of coagulated blood; the third ventricle being also distended, and the lateral ventricles containing coagula and bloody serum. Brain quite healthy, except for some of the yellowish gelatiniform softening of the remains of the cerebellum, with some ecchymoses (*capillary apoplexy*) so often observed about the seat of an effusion, but not found in the case previously reported. Some disease of the arteries at the base, in both cases.

The left kidney, from the above case, which was shown, was formed of a congeries of large cysts. Two of these contained calculi (*oxalate of lime*, &c.), which adhered firmly to the soft parts; one of them being for the most part covered over with a white fibrinous substance which may have resulted from some former effusion of blood. In the pelvis there was also a larger calculus, of an elongated form, sending branches into the openings from some of the infundibula, and adhering to them so as entirely to prevent the escape of the fluid from the corresponding cysts. The other organs were sufficiently well. Disease of the kidneys had not been suspected; but after the patient's death, his wife reported that he had long been subject to pain in the loins, with some tendency to incontinence of urine.

Profuse Salivation in a Female of eighteen years, four and one-half months advanced in pregnancy. The case was related by Dr. COALE.—The patient, married one year since, is well in health, notwithstanding the profuse salivary discharge, by which three or four handkerchiefs are saturated in an hour and a half. The flow of saliva is constant, and excessively annoying; notwithstanding, she *gains flesh*, and the system does not, apparently, suffer. The papillæ of the tongue are very prominent, with some engorgement of the lining membrane of the mouth. No remedies Dr. C. has tried have been of the least avail.

Dr. STORER observed that this was undoubtedly a symptom of pregnancy; that it is mentioned as such by most writers upon midwifery; he thought the cases must be rare, however: he had never seen but one case in his own practice; in that case, the woman, in all her pregnancies, five in number, suffered exceedingly for two or three months, the inconvenience commencing early in each pregnancy.

Dr. JACKSON alluded to a similar case, which he reported fully at a subsequent meeting.—The patient is a delicate woman, and has had seven children, besides two miscarriages. Salivation comes on with each pregnancy between the fourth and fifth week; and continues from four and a half months, which was the shortest, to the third day after confinement, which has been the longest period. Fluid seems to come from the mouth, and amounts in quan-

tity to about three pints daily during the whole time; being fully established in two or three days from the time it commences, and going off at last even more suddenly. Attended throughout with nausea, and often with vomiting; distress after food, and constipation; to which symptoms she is not subject. Is salivated equally when sea-sick, but not when affected with common nausea. Dr. J. has recently attended her in confinement, and tried a great variety of remedies to check the salivation; but it continued unabated during the greater part of her pregnancy.

[Dr. BLUNDELL (*Diseases of Pregnancy: Prin. and Pract. Midwifery*, p. 1129) remarks that "very copious salivation will sometimes occur during gestation, and where the patient has not taken one grain of mercury." He adds that he saw a case of this sort strongly resembling mercurial ptyalism; the fetor and ulceration of the gums, however, were wanting. "If the quantity of saliva is not very great, the patient may swallow it; and thus somewhat moderate the exhaustion which would otherwise occur." Dr. Blundell's patient secreted saliva so plentifully, however, that, when she swallowed it, the stomach was offended and vomiting ensued. If salivation be very profuse, and the system suffer much, he recommends the induction of delivery; which, in all probability, would cure the disease; but where the secretion is smaller, a remedy of this kind would not be justifiable. "Meddlesome midwifery is bad." Dr. B.'s patient, above referred to, did well without interference; from his reporting only one case, the rarity of the affection may be inferred.]

Dr. COALE read to the Society the subjoined letter from Mr. ROBERT CEELEY, of Aylesbury, England, and prefaced the reading with the following remarks:—

"From the circumstance of several cases of smallpox and varioloid occurring in persons who had been previously vaccinated, I was induced last autumn to suspect the efficiency of the vaccine matter in current use amongst us. I therefore wrote to Dr. Golding Bird, one of the Physicians of Guy's Hospital, London, asking him to procure me a crust direct from a cow affected with the original vaccine disease. Though a perfect stranger to me, and I without the slightest claim upon him, he at once interested himself in the affair, and wrote to his friend, Mr. Ceeley, of Aylesbury, who had given much attention to the subject of vaccination, and had published some valuable papers upon it. This last gentleman procured what I desired, through a similar kind interest and zeal of Mr. Badcock, of Brighton, and transmitted the cow matter to Dr. Bird, with the following letter, which I will read to the Society.

"The matter thus procured I have exerted myself to distribute as widely as possible, considering the kind exertions of the gentlemen in furnishing it, not so much a favour to me personally, as the promptings of a generous humanity to benefit all. I believe the physicians of the city are now generally supplied with it.

"I feel it due to the zeal and care of two of our own physicians to state that, upon the first publication of Mr. Ceeley's experiments, Dr. Adams, of Waltham, and Dr. Putnam, of Boston, immediately repeated them, and successfully, furnishing the city and neighbourhood with all the vaccine matter used here since that period; a fact, however, of which I was ignorant when I sent to England for a new supply."

AYLESEURY, December, 1851.

MY DEAR SIR: Your application on behalf of Dr. Coale, of Boston, U. S. of America, would have been most cheerfully complied with had it been in my power to do so.

Similar applications for crusts and charges of primary vaccine lymph, have been often made to me from various parts of Great Britain and the continent, since the publication, in 1839, &c., of my "Observations on the Variolæ Vaccinæ, as they appear in the Vale of Aylesbury, with an account of some recent Experiments on the Vaccination, Retro-vaccination, and Variolation of Cows." (*Trans. of the Provincial Medical and Surgical Association*, vol. viii. and x.) But, I regret to say, that of late years the cows here have failed to yield me the supply of lymph and the opportunities for observation they formerly did.

The vale of Aylesbury is now, to all appearance, barren of primary vaccine, and void of materials for observations which I would gladly prosecute, and which ten or twelve years ago occupied so much of my time.

The milkers in general, nowadays, have all undergone vaccination, and being thus less susceptible to the severe influence of the natural vaccine disease, are not apt to apply for surgical aid. We may, therefore, for this reason, lose occasional opportunities of detecting the disease in the cow: but there can be no doubt that the true variola vaccina is now a rare disease in this locality, while the other contagious eruptive diseases of the animal (nearly always confounded by the milkers and dairymen with it), are as common as ever.

You are aware that in my "Observations" just referred to, I entered fully into the subject of the vaccination, retro-vaccination, and variolation of the cow, and the effects of the resulting lymphs on man.

In my successful experiments on the variolation of the cow, and the production of the vaccine lymph, in February, 1839, I furnished indisputable proof of a very interesting and important pathological fact. A fact which had long been doubtful and disputed, notwithstanding the previous experiments at — in 1801; by Gassner, in 1807; Sunderland and others, subsequently; and, lastly, of Thiele, in South Russia.

But to those who thought a new stock of vaccine lymph was occasionally desirable, or who might need a supply when no other source was at hand; this pathological fact yielded additional reason for congratulation.

Hence the lymph thus obtained by me, on two or three such occasions in that year, was much sought after, and was abundantly distributed by me over England, Scotland, Ireland, Europe, Africa, and North America (I think).

It was kept also under my own observation for more than two years, was tested by smallpox virus and effluvia, and found equal in all respects to the Jennerian lymph of 1800.

In December, 1840, an intelligent chemist of Brighton, Mr. Badcock, thinking with many others that a new stock of vaccine was needed, and being, as I understand and believe, unacquainted with my successful experiments, commenced, for the above purpose, the variolation of the cow, and he was singularly successful. Having a high opinion of such lymph above that long in use, he has, for the last ten years, occupied himself in procuring it for his own use in vaccinating children, and distributing it to professional applicants.

Being intimately acquainted with Mr. Badcock, whom I consider deserving of infinite credit for his zeal, perseverance, and great liberality, I have applied to him for a new supply for Dr. Coale. After about twenty fruitless attempts, he has at last succeeded in his endeavours, and I have now the pleasure of sending you, for Dr. C.'s use, a most liberal and choice supply. The parcel contains the following, viz.:—

1. The crusts from a variolated cow.
2. A glass charged from the same source.
3. Some points charged from a splendid vesicle raised on a child's arm by some of the above primary lymph.

All these are to be employed in the usual way; but I generally find the most successful method is to rub the lymph on small clusters of superficial scratches

of the skin (instead of puncturing it). I hope this stock, of what I first denominated variola vaccina, will prove successful in use.

In regard to the vexed question of the deterioration of the current vaccine by frequent human transmission, you are aware that I have fully discussed this subject in my "Observations," &c.

That variolous lymph can be and has been deteriorated by a variety of causes, is indisputable. The fact is notorious in India (*Quart. Journal of the Calcutta Medical and Physical Society*, April 19, 1837). It has been proved in Paris (Notice sur le Cowpox découverte a Passy, par M. Bousquet, 1836). It has been demonstrated in London (Report on Smallpox, by Dr. Gregory, *Med. Gaz.*, Feb. 24, 1830). That it may be rendered weak and inefficient by accident or carelessness, by ignorance, or something worse, every experienced vaccinator will readily allow.

But that the above results *in temperate climates*, and with every attention and care required, are inevitable, I do not think satisfactorily proved. But the fact of actual degeneration can alone be settled by a reference to the standard of Jenner. Of the correctness of this standard no one can doubt. I have repeatedly proved it by the use, at different times, of natural and artificial vaccine, from at least fifteen or sixteen sources. If any given lymph possess the sensible properties described by Jenner in his first work; if in the *majority* of subjects, it produces a vesicle of the normal size and form, yielding a readily infective lymph on the 8th day, after which period an areola commences and increases till the 10th or 11th, and the vesicle change into a hard dark crust on the 14th or 15th day; I cannot see that it is possible to impeach the efficacy of that lymph. Its failure to protect from smallpox must depend on other causes. Uniform or very frequent deviations from the standard of 1800, to me would be conclusive of such a fact, and compel me to seek a new supply. Repeated observations of the constitutional effects of all the vaccine I have ever used, enable me to corroborate the assertion of Jenner, that the *primary* disturbance is slight and trifling, the *secondary*, attending the local erysipelatous inflammation, though often severe, are not essential to the specific influence, though they mark the completion of a process and afford satisfactory evidence of a previous important fact. As I have said elsewhere, "My own repeated applications to the cow have been chiefly for the purpose of experimenting for the satisfaction of patients or for the accommodation of friends, not from any belief in the superior protective efficacy of such lymph over active current *humanized* lymph."

"But when lymph is found *uniformly* deficient in infective property (Bousquet, *loc. cit.*)—vesicles abnormally rapid in their course, at their greatest development on the 7th day; yellowish in appearance on the 8th; with turbid lymph, central desiccation, on the 9th; and a miserably small crust, falling on the 15th or 18th day—such lymph, or anything approaching it, ought to be rejected."

* * * * * Mr. Badcock intends contributing to the great exhibition to be held in New York, in the form of Daguerreotype illustrations of the result of some of his experiments. * * * * *

Yours, very truly,

ROBERT CEELEY.

TO DR. GOLDING BIRD.

Poisoning by Cyanide of Potassium.—DR. PERRY related the case. A nurse administered this poison, by mistake, to a child who had slight cough, instead of a cough mixture which stood near the bottle of solution of the cyanide.

The immediate effects of the dose were vomiting and convulsions; then insensibility, locked-jaw, coldness of extremities, which were pendulous and without muscular power—diminished frequency of respiration (12 to 16 per minute), the pulse small, but distinct, 60 per minute; the circulation languid, pupils dilated, sphincters paralyzed; the teeth closed so firmly and continuously, that only once or twice could anything be poured into the mouth.

Dr. P. saw the child in fifteen minutes after the accident, and found it in a warm bath, and insensible. *Treatment*.—Stimulants externally and internally; mustard bath; inhalation of ammonia. Death was sudden. No *post-mortem* examination obtained. The quantity of the poison taken was not very far from gr. iv.; the strength of the solution of the salt was $\mathfrak{z}\text{j}$ to $\mathfrak{z}\text{j}$ of water. Taylor states that gr. iv will prove fatal in ten minutes; this child lived one and a half hours. Dr. P. remarked that this is the first case of the kind he had heard of here.

Puerperal Peritonitis.—The case was reported by DR. HOMANS, and was interesting in connection with its presumed cause. The husband of the patient was suffering at the time from diffuse cellular inflammation about the elbow, with a discharge of pus for two days before her confinement; and to this, as a cause, Dr. H. was disposed to attribute her disease. For the first two days she did well; but on the third day there came on chills followed by heat, with tenderness of the abdomen, anxiety and restlessness, headache, vomiting, and diarrhœa. Six or eight dejections daily. On the fifth day she was somewhat better, but the abdomen was more tender. On the sixth day worse, with light delirium; and on the eighth day after her confinement she died. The abdomen became very tumid, and the diarrhœa continued to the last. Some secretion of milk; but cessation of lochia. No autopsy.

March 8.—False Membrane of Croup.—DR. BOWDITCH showed a very perfect and remarkable specimen of the membrane formed in the above disease. It was a complete cast of the larynx, trachea, and primary divisions of the bronchi, and was thrown up, entire, after the use of calomel and ipecacuanha. Nitrate of silver was subsequently used, by the advice of Dr. B., on the return of dyspnœa, which was relieved after the membrane came away, but became aggravated in the evening of the same day. The solution was of the strength of $\mathfrak{z}\text{ij}$ to $\mathfrak{z}\text{j}$ of water. The sponge, about three-fourths of an inch in diameter, well filled with the solution, was applied to the epiglottis and its neighbourhood, thoroughly, once; vomiting immediately followed, with copious discharge of mucus; the breathing was again relieved. The solution was applied through the night, every two hours, by Dr. Holman, of Harvard, Mass., with whom Dr. Bowditch saw the child, and who communicated the after particulars of the case to Dr. B. The child was at first skilfully and judiciously treated by Dr. Newell. In addition to the application of the caustic, the powders were continued with emetic effect. On the 8th of March, (the child having been first seen by Dr. B. on the 6th, with Dr. Holman) after giving a powder, the solution was applied, vomiting followed, and another portion of membrane was thrown off about one-half the size of that exhibited to the Society. This was, apparently, mainly from the bronchi of the right side. Dr. Holman writes to Dr. B. that this latter discharge of membrane entirely relieved the croupy breathing, and the cough lost its distinctive character. A blistering tissue (4—4 inches) had been applied, previously, below the right clavicle, where signs of bronchial inflammation had been observed; the bowels were moved by oil. Thirst subsided; appetite began to reappear. R. Decoct. Senegæ; small doses, every three to four hours. 9th March. Rest good the previous night; respiration for past twenty-four hours almost perfectly natural; voice does not return; light food apparently relished. 10th. Report favourable; child calls for food; pulse 80; breathing natural; cough infrequent; stomach and bowels quiet; disposed to sleep. 11th.

Morning; slept all night, except when aroused; but quite restless, flinging the arms about and frequently moving from one side of the bed to the other without waking. Pupils, on examination, enlarged; eyes not injected. Somnolent tendency, which finally became stupor, and death occurred at 11 o'clock P. M. No *post-mortem* account is given. [The attack was on March 1; duration of disease, consequently, ten days, some hours. The child, a female, three years and a few weeks old; previously in excellent health.]

Dry Chronic Arthritis.—DR. HENRY J. BIGELOW brought a series of joints, affected, in different degrees, by the above disease. The specimens were taken from a dissecting-room subject. They were like those showed at a former meeting, but presented, from one subject, almost all the varieties of appearance resulting from this disease, from a simple depression in the cartilage, to great wax-like deposit upon the articular edges (*gouttelettes de cire*), partial dislocation, and foreign bodies.

Fracture of the Radius.—DR. H. J. BIGELOW exhibited some specimens of rather rare fracture of the radius. This bone, Dr. B. remarked, is nearly always transversely broken. The first specimens shown were from a man who fell from a mast-head, producing compound fracture of the femur, with displacement and fracture of both wrists. Death, the next day. One radius is seen to be split through its articular surface, obliquely to its dorsal aspect, like Barton's fracture; all the dorsal aspect of the joint being broken off. In the other radius there was oblique stellated fracture of radius on the surface of the joint; no great deformity of the joint. Dr. B. pointed out a piece of bone in one of the ligaments of the joint.

Strangulation from Enlarged Tonsils—Laryngotomy.—DR. J. M. WARREN showed the larynx of a man on whom he had performed the operation. The patient was brought into the hospital struggling for breath, and almost pulseless, supposed to be labouring under an attack of laryngitis. The danger of suffocation was so imminent that no time could be spared to inquire into the history of the case. Dr. W. had the patient placed immediately on his back, and proceeded to open the larynx—a matter of some difficulty—owing to the violent efforts of the patient for breath. As soon as the air penetrated freely into the larynx, he began to revive; the pulse became more steady; the respiration regular. Stimulants were exhibited both by the mouth and per anum, but the system had received too severe a shock to recover, and he gradually sank and expired quietly in an hour or two after the operation. On removing the larynx, no marks of inflammation of that organ could be detected. On looking further, however, the cause of death was discovered. The tonsils, greatly enlarged, and in a state of violent inflammation, filled up the posterior fauces. The epiglottis had been gradually encroached upon, so that, finally, it was pressed down, and almost completely prevented the entrance of air into the lungs. The history of the case, as learned afterwards from the father of the boy was this: He had been employed, four days before, in unloading a ship, the weather being very cold and rainy. The following day he was taken with sore throat, for which some simple remedies had been applied on board the vessel where he slept. He was first seen by a physician on the day he was brought to the Hospital.

Gall-stones; with Ulceration of the Duodenum, as if to give exit to them. Fatal Hemorrhage from the Ucer. Case reported by Dr. HOMANS.

—The patient was a large, fine-looking man, 49 years of age, but subject to colic. Five weeks ago he was taken with a pain across the upper half of the abdomen, having somewhat of a rheumatic character, and followed in a few days by jaundice; the skin and urine being tinged with bile from that time, and towards the last, deeply so. He kept his bed for a few days, but was soon out and able to attend to his business. Nine days ago he was attacked, whilst walking in the street, with a violent pain in the abdomen, nausea, and vomiting; and, from that time, was confined to his room and mostly to his bed. The nausea, however, of which there was none in the early part of his sickness, soon subsided; but the pain continued until the last, being of a colicky, paroxysmal character, with tenderness on pressure over the seat of the disease. Appetite small from the time of the first attack; and the bowels very costive, the dejections being clay-coloured, with much flatulence for the last two or three weeks. Five days ago, he had, after a laxative, the first discharge of blood, which was tarry in appearance, consistent, and rather large; and twelve or fifteen hours afterwards a second, of liquid blood, and about half a pint in amount. The number of these discharges altogether was not more than three or four. On Friday night he had one which was estimated at three pints, became exceedingly faint, nearly pulseless; and, from that time, sank regularly until this morning at nine o'clock (Monday), when he died.

The dissection was made by Dr. Jackson, and the parts exhibited by him to the Society. The ulcer, which was well defined and apparently recent, commenced one-fourth of an inch from the pylorus, and measured one and a quarter inch by three-quarters of an inch. From the base there hung off a firm coagulum of the size of a nutmeg; the small intestine being dark-coloured throughout from the quantity of blood it contained. About a dessert-spoonful of small, round, smooth calculi were contained in the gall-bladder and ducts; the first being of medium size, though the parietes were diseased. The ducts, however, were considerably dilated; the cystic measuring transversely at its largest part, when cut open, one and a half inches, the hepatic, one and three-quarters of an inch, and the common duct two inches, but contracting gradually to its natural size where it opened into the intestine. The most interesting point, Dr. J. remarked, was an adhesion of the duct to the external surface of the intestine, and just at the situation of the ulcer, though there was no appearance of ulceration nor of any other disease of the duct itself; the ulceration commencing upon the inner surface of the healthy intestine, and apparently with a view to open a communication with the ducts, as, in the case of aneurism of the arch of the aorta, ulceration not unfrequently begins upon the mucous surface of the air-passages or œsophagus, and not upon the inside of the aneurismal sac, where perforation seems to be the ultimate object. The liver was olive-coloured, small, and quite flaccid, but apparently healthy in structure, as were the other organs.

March 22.—Cancer of the Breast. Dr. J. M. WARREN presented the specimen and related the case.—The patient was 50 years old, and the operation was done at the hospital. A year ago, a small movable tumour existed in the right breast; eight months since, she applied to a “cancer doctor,” who may be said to have *manured* the lumps with caustic; for, under its constant application since, the disease had increased so as to present a formidable tumour surmounted by a circular ulceration. The tumour was quite unattached to the pectoral muscle, and the whole apparent disease removed by the knife.

Two or three axillary glands, enlarged from the irritation kept up by the caustic, disappeared a few days after the operation. The patient was sufficiently recovered in a fortnight to go home.

Dr. W. had seen one or two cases lately of cancer of the breast treated by caustic, in which the result has been similar to the one above stated.

Sympathetic Trouble in the Ears from Disease in the Eyes.—Dr. BETHUNE related the case.—A single lady, between 50 and 60, who had complained of headache, had occasional diarrhœa, and was affected with pityriasis—was subject to tinnitus aurium after using the eyes in reading, exposure to gas-light, &c. There was stiffness of the lids with lachrymation. General means, with counter-irritation, were successfully used. Dr. B. said that this is the first case of the kind he has observed.

ART. VII. *Report on the Action of Cochituate Water on Leaden Pipes, and the Influence of the same on Health.* By JACOB BIGELOW, M. D., Professor of Materia Medica and Clinical Medicine in Harvard University.

THE committee appointed by the Society of Medical Improvement in Boston, for investigating the question of the occurrence of any diseases attributable to the presence of lead in the aqueduct water introduced into the city, from the Cochituate Lake, in January last reported as follows:—

That from an extensive inquiry among physicians, and also from the bills of mortality, they are led to believe that the health of the city of Boston has been uncommonly good during the last two years, and they have not learned that any well-marked cases of the diseases usually attributed to lead, have occurred, which were not traceable to some other cause than the use of Cochituate water drawn from leaden pipes.

It appears from the experiments of Professor Horsford, that the water of the Schuylkill and Croton Rivers, and of Jamaica and Cochituate Lakes, acts upon the surface of the lead so as to take up a small portion of that metal during the first two or three days of its contact. But after a few days the surface of the lead becomes coated with an insoluble compound which protects the lead for the most part from the further action of the water. Nevertheless, traces of lead are reported to have been found by various chemists, in specimens of some of these waters, when greatly reduced by evaporation.

In consequence of the extensive use made of lead for various economical purposes, no person in civilized society can expect to escape from the reception of that metal in minute quantities into the body. The presence of lead in the paint of dwelling-houses and furniture, of water-buckets and other culinary apparatus, in vessels made of leaden alloys or soldered with the same, in the lining of tea-chests, in flint-glass, and in the glazing of coarse pottery, furnishes but a part of the examples which indicate our exposure to receive this metal in our daily food. To these examples it may be added that physicians give lead to their patients sometimes for weeks successively,

and apply solutions and solid compounds of the metal to absorbing surfaces for longer periods; that persons are known to carry shot and bullets in their flesh during a long life; and, finally, that reliable chemists testify that lead exists in the solids and fluids of man, and in those of some of the animals on which he feeds.

From all these facts we are authorized to draw the conclusion that, in the present state of our knowledge, the presence of lead in a very minute amount, like the presence of other substances in infinitesimal quantities, is inoperative upon the living body.

It is a general law known to medical men, and to which there are not many exceptions, that diseases and symptoms produced by specific metallic agents, such as mercury, lead, and arsenic, do not cease until after the withdrawal of those agents. But it appears from the records of the Massachusetts General Hospital, during the last twenty years, as well as from the private experience of physicians, that many cases of lead colic and paralysis, acquired by persons who work in that metal, have got well under the daily use of water delivered from leaden pipes. This would not probably have been the case did the water contain any deleterious amount of lead in solution or suspension.

The principal diseases ascribed by Tanquerel, and some subsequent writers, to the presence of lead, are colic, paralysis, arthralgia, and encephalopathy. Of these the committee have not been able to learn that there has been any sensible increase in this city since the introduction of Cochituate water. Of lead colic, but one case has entered the hospital during the last two years, which is a smaller proportion than the average of the preceding twenty years. Of lead paralysis there have been but two cases within the same period, both occurring to workmen in lead. Of arthralgia or pain in the joints or limbs directly traceable to lead, it is believed there have not been a sufficient number of cases at any time to attract extensively the notice of our physicians. As to encephalopathy, a general term used by some writers to express cerebral disease, and including coma, delirium, convulsions, &c., there is apparently no more reason for attributing it to lead, than consumption, fever, or any other common disease which may happen to occur among lead workmen.

It is obvious to a medical reader, that many of the cases detailed by writers on lead diseases are coincidences rather than consequences; and, therefore, do not furnish a ground for general laws. Such is the case when persons have been supposed to have contracted lead diseases by sleeping in newly-painted apartments, where, unless the lead were volatile, it could not leave the walls to enter the bodies of the patients. It is also the case when solitary examples of common diseases are ascribed to lead, when it is known that they more frequently result from different causes. It is also often the case when the reports of credulous and incompetent observers are received as scientific authority.

In a late "English Report by the Government Commissioners on the Che-

mical Quality of the Supply of Water to the Metropolis," of London, made in 1851, by Drs. T. Graham, W. A. Miller, and A. W. Hoffman, men of high standing in the scientific world, an investigation is made of the condition of the various waters now supplied to that city. In this Report, the commissioners state (page 32) that "no recent or authenticated case can be cited of the health of any of the numerous towns lately supplied with soft water, being affected by the use of leaden distributing tubes." Again, on page 33, the commissioners say: "We are disposed, therefore, to conclude that the danger from lead in towns supplied with water, has been overrated; and that, with a supply from the Water Companies, not less frequent than daily, no danger is to be apprehended from the use of the present distributing apparatus, with any supply of moderately soft water which the metropolis is likely to obtain."

On the present occasion it is by no means intended to deny the well-known fact that certain acid liquors, also that the water of certain springs and wells, may and do act upon and even dissolve lead in such quantities as to prove injurious to human health. It is also possible that at certain seasons, and under certain circumstances, the soft water of lakes and rivers may contain organic or other products, which may take up in solution a minute portion of the pipes through which they pass. And it may even be conceded as possible, that a few susceptible and predisposed individuals will get lead diseases while using this water. Nevertheless, lead is a very convenient material to be used in aqueducts. It is more cheaply manufactured, more conveniently applied, and more readily repaired, than any other material. And while this is the case, mankind will not be prevented from employing it. The general law derived from the experience of the large cities of this country and of Europe is, that its employment for the conveyance of soft water is safe. To this law the few recorded cases of disease, as far as they are genuine, must be regarded as exceptions. And it should be borne in mind that nearly all the great agents which minister to the physical happiness and improvement of man, are fraught with more or less danger. Ships and railroads, fire and water, food and medicine, destroy annually multitudes of our species. Nevertheless, all these agents increase every year in use, with the increase of wealth and civilization. And as an humble example under the same law, it is not probable that the leaden aqueduct will be abandoned, on account of the inconsiderable risk which it involves of occasioning disease. From the present state of our knowledge, we are authorized to conclude that the insurance on a citizen of Boston, New York, Philadelphia, or London, against lead colic, is probably worth much less than his insurance would be on a voyage across the Atlantic.

ART. VIII.—*On the Employment of the Chloride of Sodium in the Treatment of Intermittent Fever.* By W. P. LATTIMORE, M. D.

THE discovery of some agent capable of serving as a substitute for Peruvian bark, or for its active principle, quinia, in the treatment of intermittent fever, has long been desired, in consequence of the high price of the sulphate of quinine, and the great adulteration of the salt to which this has given rise. The amount paid for quinine alone, is no small item in the annual expenses of the country physician; and this is likely to be increased, as it is said that a company of English druggists have monopolized the entire crop of Peruvian bark for many years to come.

In view of the interest necessarily felt in this subject, we have thought it might not prove uninteresting to the readers of the *American Journal*, to give the results of investigations made by the eccentric Piorry, upon the use of common salt in the treatment of intermittent fever. The investigations were commenced at La Pitié, and continued at La Charité, where they were witnessed by the writer.

The attention of M. Piorry was drawn to the subject by a memoir, presented to the French Academy of Medicine, in July, 1850, by Dr. Scelle Montdezert, entitled, *Practical Considerations upon the Treatment of Intermittent Fevers, and upon the mode of action of the Salts of Quinia, and of the Chloride of Sodium.*

In this memoir, M. Scelle Montdezert supposes that every paroxysmal fever is due to the presence of fibrin in the venous blood; this fluid, in the normal state, being deprived of fibrin by the process of assimilation. That the salts of quinia owe their efficacy as anti-periodics to the fact that they dissolve this fibrin abnormally present, thus restoring the venous blood to its normal conditions. In casting about, then, for a substitute, he saw that nature had largely disseminated both potassa and soda, each possessing, in a remarkable degree, solvent properties. Seeking, among the various combinations of each, that one which, uniting with the divers elements of the blood, should furnish the fewest insoluble compounds, he naturally selected the chloride of sodium, which forms none. He administered it, and then goes on to say:—

“On account of these considerations we experimented without fear of injury, and we declare with satisfaction that the results of its employment are such that salt may now be considered as sharing with the salts of quinia the prerogative of arresting the paroxysms of intermittent fever. It is sufficient to administer half an ounce of it in the morning, before eating, during the apyrexia, in half a glass of infusion of coffee. Its use should be continued for three days.

“Fortunate results, observed during several years, have confirmed our foresight. It is a counter-proof of our opinion, long since emitted, upon the action of the sulphate of quinine, and one which gives the most satisfactory solution of this therapeutical problem.”

M. Scelle Montdezert gives the history of no cases treated by salt, although he alludes to many in which the agent was successfully employed. Under these circumstances the matter came into the hands of M. Piorry, who was one of the committee appointed by the Academy to report upon the memoir, and his cases are the only ones known to us. From these researches it will be seen that the chloride of sodium cures intermittent fever, like the sulphate of quinine, by acting upon the spleen and diminishing its volume, and this sometimes in less than a minute. And in this connection it may be of interest to say a few words in regard to the views of M. Piorry concerning the spleen in intermittent fever, and his method of diagnosing the disease.

He holds that in all paroxysmal fevers the spleen is enlarged; that the anatomical lesion is the cause, the fever only the symptom; that wherever the spleen has a greater length (measuring in a line extending from the middle of the axilla to the anterior superior process of the ileum), than from 31 to 33 lines, intermittent fever exists. Believing thus, the symptoms for him are zero, while the state of the spleen stands at the other end of the scale, and is everything—percussion (pleximetric) of course, being the *experimentum crucis*.

We cannot resist the temptation of here paying a tribute to the skill with which M. Piorry employs percussion in making a diagnosis. With him *auscultation* is but an infant when compared with its full grown brother *percussion*. By its aid he interrogates the abdominal viscera as frequently as the thoracic, and with no less success, for he has brought it to an almost incredible degree of perfection. With his plate of ivory and his flattened fingers' ends he diagnoses almost everything—tumours of the abdomen, abscesses everywhere, aneurisms, &c. All acknowledge the delicacy and accuracy of his test, while the looker on is lost in admiration, and wonders whether all his senses are not really concentrated in the ends of his fingers, which by constant drumming have at length become the very reverse of tapering.

Wishing, then, to experiment with salt, a few cases of intermittent fever (old staggers), contracted in Algiers were selected as subjects. Behold, then, Piorry at the bedside. The patient asserts that he contracted the fever and ague several years since in Africa; that he has frequently been cured; but that the disease has constantly reappeared at the end of fifteen days or one month at farthest. The type of the fever is tertian. The spleen is percussed and found to be abnormally dull throughout its whole extent; the entire splenic region is sensitive upon percussion, particularly over the dullest points; and each blow is accompanied by marked contortions of the countenance. This sensibility extends but little beyond the region of dulness, which last occupies an extent of fifty-three lines, measuring in the direction indicated above. To this patient a drachm of salicine is administered without producing any change in the dimensions of the spleen. A few min-

utes subsequently, half an ounce of salt mixed with a cup of soup is given, and upon carefully percussing the splenic region at the end of four minutes, this organ is found diminished one inch, from above downwards. The next day the spleen is found to be of the same size, but upon the administration of a second dose of salt, it suddenly contracts and measures nearly three-quarters of an inch less than yesterday. The resonance throughout the entire organ has increased while the sensibility has diminished. The succeeding day, the attack of fever is very slight, and upon giving a third dose, the disease does not return; and when seen six weeks subsequently, the patient is still free from his African enemy. Thus we see that a diminution of twenty-four lines in the length of the spleen was the result of the medicament, the fever being cured more effectually than ever before; *i. e.*, the patient had remained free from all relapse for the space of six weeks; one month having previously been the longest period of immunity.

We have the notes of seven cases of well-marked intermittent fever, in all of which the administration of the chloride of sodium was followed by rapid decrease in the volume of the spleen and cure of the febrile symptoms. We also have the record of three cases in which salt was unsuccessfully used; in one of these, the sulphate of quinine effected a cure; in a second it too failed, while in the third it was not tried. These were all well-marked cases of intermittent fever, such as would pass muster in any of our own malarious districts.

Let it be remembered that most of the fever and ague met with in the Parisian hospitals, is of long standing, and imported from the malarious districts of Algiers, which generate a form of the disease even worse than that found amid the marshes on the banks of the famed Maumee; that these cases have been treated again and again, have been cured now by the sulphate of quinine, now by arsenic, but only to reappear upon the slightest exposure or imprudence; in short, to recur as only *the shakes* can recur.

We witnessed many of the experiments of M. Piorry, and in the great majority of them, the fever yielded to salt quite as readily as to the salts of quinia. And as to the theory of M. Piorry, the spleen diminished under the use of the remedy, *pari passu*, with the febrile symptoms, in every case where the disease was cured, proving that this organ really shows the influence of remedies over this class of fevers—that it is, as it were, a febrile barometer—for the diminution of the spleen is a constant phenomenon accompanying the cure of the disease, whatever be the curative agent employed.

M. Piorry's method of administering the chloride of sodium is, to give half an ounce in a cup of thin soup during the apyrexia and fasting. It usually agrees with the stomach perfectly well, but in some few cases we have seen it excite vomiting and diarrhoea. Three doses commonly suffice to effect a cure, the first two to be taken on succeeding days, and the third after an interval of one day. Should the spleen be undiminished in volume by the first dose, we may be sure that the remedy will not cure the disease; and the same is true

of all the antiperiodies. Excepting in rare cases, the diminution of the spleen occurs immediately upon the administration of the remedy (salt or sulph. quinine), and may frequently be detected within one minute, after which the organ remains stationary until a second dose of the medicament be administered.

Is the chloride of sodium as efficient an antiperiodic as the sulphate of quinine? Are the cures effected by the one as permanent as those effected by the other? The first question can only be answered by those possessing a larger field of observation than the writer. May we not hope for a solution from those of our profession who observe the disease too largely either for comfort or pleasure? In regard to the permanency of the cures, we apprehend there is not much difference, be the medication what it may; for relapses are only too common after the greatest care and most patient attention.

Should the discovery prove as useful and applicable as it promises, the benefit accruing from it will be immense. If it be capable of taking the place of the sulphate of quinine in the majority, or even in one-half the cases of intermittent fever, therapeutics will be largely the gainer.

NEW YORK, March 26, 1852.

ART. IX.—*New Views concerning the Nature and Cause of Tubercular Deposits.* By MATTHEW TROY, M. D., of Whiteville, North Carolina.

THERE is no disease, perhaps, in regard to the pathology of which a greater number of discordant theories have been advanced than that of tubercular consumption. This has arisen as well from its frequency and almost invariable fatality—which would naturally lead the profession to direct their most earnest attention to its investigation, in the hope of discovering for it some certain means of cure or prevention—as from the tangible nature of the product by which it is characterized, and which seems to invite investigation, by promising an easy and ready explanation of its nature and cause. In but few diseases can we lay hold of the *materies morbi* itself. But our being able to do so in the case of consumption seems to have been of but little advantage in leading us to correct views in regard to its true nature and treatment.

It is not my intention to attempt a history of the disease, or to discuss the comparative merits of the several theories that have been advanced in relation to it; but shall merely, previously to offering my own views, give a brief notice of the present opinions of the profession as to the pathology of tuberculous diseases generally.

Three distinct theories are still held by respectable portions of the medical profession. Two of these are known as those of Andral and Carswell, the

third, of which Dr. Charles J. B. Williams claims to be the author, I shall, for convenience sake, call by his name.

The first two do not differ very materially from each other. Andral considers tubercle as—

“Nothing else but a secretion of matter which seems to be produced indifferently, either in the last bronchi or in the vesicles which succeed them, or in the cellular tissue interposed between the latter, or in the inter-lobular cellular tissue. This matter, which seems to be primarily liquid, becomes solidified at a period more or less remote from that at which it was secreted, and becomes a tubercle.”—*Med. Clinic*, vol. ii. p. 212.

“Dr. Carswell considers the tuberculous matter to be a secretion *sui generis* totally destitute of organization, as effete matter, continually separated from blood when this is in an unhealthy state, and thrown out chiefly on the free surface of mucous membranes; and producing bad consequences only in proportion as it accumulates in organs, impedes their functions, and acts on them as foreign matter.”—*Williams and Clymer on the Respiratory Organs*, p. 341.

Neither of these views, even if true, would materially advance the state of our knowledge on the subject, as neither of them touch upon the *cause* of the secretion, or the nature of the diathesis in which it occurs; nor does it explain how this effete matter comes to be in the blood. This is the radical defect of Dr. Carswell's theory. My hope is to be able to remedy this defect. The theory of Dr. Williams is much more generally adopted than either of the others, notwithstanding the difficulties many have seen in it, because it is at least definite and tangible.

“Instead of (with Laennec) classifying tubercle under the vague term of accidental productions, or (with Carswell) as a secretion *sui generis*, I have for many years referred tubercle to a degraded condition of the nutritive material from which old textures are renewed and new ones formed; and that it differs from fibrin or coagulable lymph, not in kind, but in degree of vitality and capacity of organization.”

This theory I propose now to analyze, and see if the facts induced in its favour are sufficient to establish it beyond a reasonable doubt, and whether the arguments are all consonant with the well-known principles of physiology.

The symptoms resulting from a *deficiency* of fibrin in the blood are well described by Dr. Williams:—

“A defect of fibrin causes a tendency to hemorrhages, generally the asthenic kind, and to an unmanageable oozing of blood from any accidental wound or breach of texture. In the same cases, too, wounds do not readily heal nor fractures unite; in fact, the plastic or reparative process is defective, for want of its material, and for similar reasons the nutrition of textures, which consist chiefly of fibrin, such as muscle, is ill-maintained.”—*Princ. of Med.*, p. 108-9.

We should suppose, where the material for the plastic or “reparative process” was “degraded,” that the nutrition of the textures, which consist chiefly in the deposit of fibrin, would be ill-maintained for want of “capacity of organization” in its material. But the muscles do not suffer pre-eminently, or at least primarily, in phthisis.

What evidence have we that the fibrin in this disease is degraded? Do not "wounds heal and fractures unite," sometimes with great readiness, and always as soon as in other diseases attended with an equal disturbance of the system? Does the surface of wounds ever become coated with a deposit having the remotest resemblance to tubercular matter? Is not the fibrin, which is effused upon them, capable of ready organization? Why is not tubercular matter most frequently deposited in the substance of muscles, or wherever the nutrition is most rapid, the amount of interstitial change greatest, and the calls for efforts at organization most constant and considerable? But this is not the case with the parts in which tubercle is most frequently effused. There is no evidence that the mucous membrane of the bronchial tubes is remarkable for the activity of its nutrition, and the same may be said of the lymphatic glands. In a word, the liability of any organ to tubercular deposits bears no relation to the quantity of fibrin ordinarily required for its nutrition. But is it not plain this would necessarily be the case if a diseased state of the fibrin had anything to do with it? In fact, the fibrous tissues seem rather to possess a positive exemption from the disease:—

"We have never found tuberculous matter in cartilage, fibrous tissue, serous, synovial, or mucous membranes, tendon, or muscle."—*Carswell's Cyc. of Pract. Med.*, art. TUBERCLE.

Upon what principle of physiology can we conclude that, in a disease affecting in a peculiar manner the sole and entire organizable material of the blood, rendering it unfit for its office, the lungs would be the first part sensibly affected by abortive efforts at nutrition in so very large a proportion of cases? Is it not perfectly plain, that when an entire principle of the blood is affected, the whole body must suffer, and the different parts of it in the precise ratio they make use of that principle? This is the case in chlorosis; and we must admit the possibility of an exception to the laws of nature, before we can allow that it can be otherwise in any disease.

It is true that there is an excess of fibrin in the blood of phthisical patients, in the latter stages, but not until inflammation has been excited by the presence of tubercles. If there were any foreign body—a bullet, for instance—lodged in the lungs, and not encysted, it would excite inflammation, attended by cough, purulent expectoration, &c.; or, as Watson expresses it, "all the symptoms of chronic phthisis," and the fibrin would be found to be augmented in proportion to the extent of the inflammation. But it would not be very philosophical to ascribe the presence of the bullet to the excess of fibrin in the blood, even though we might not know positively how it came there.

There is another reason, which of itself seems conclusive against tubercle being the plastic material in a degraded state. It is that *plastic* lymph is almost always thrown out in immediate connection with tubercular matter. In describing a vomica, Dr. Williams says:—

"The bloodvessels, however, are almost always impermeable in these cases, and the septa are thickened by the *deposition of lymph, &c.*"—*Williams and Clymer on Resp. Organs*, p. 329.

Now is it not a fact of physiology, that where lymph is effused in contact with a structure formed of it, that it takes the form of that structure? Is it not contrary to all that is known of pathological process, to suppose that a structure of *lower* vitality could have one of *higher* vitality formed in its midst, and from the very material by which this lower structure is produced; more especially, while the causes of "degradation" are still in full force? If tubercle is lymph, degraded of course, areolar tissue cannot be formed from lymph effused in contact with it; at least, until the causes of degradation are entirely removed. But if it is a *foreign body*, *healthy lymph* may be effused for the purpose of encysting it; and this may be converted into a tissue by which the bloodvessels are closed and the septa thickened.

The lymph corpuscles noticed by Mr. Gulliver in tubercular matter, do not go further towards proving Dr. Williams's theory, than any of the others. Whatever be the nature of tubercle, it is certainly capable of exciting inflammation in the tissues where it is deposited. This inflammation causes an effusion of plastic lymph, for the purpose of encysting the foreign body. But it being soft, liquid, Andral says (Sir Jas. Clark is of the same opinion, *Cyc. Pract. Med.*, art. TUBERCULAR PHTHISIS), and continually augmenting by fresh deposits, the fibrin is mixed with it, its corpuscles separated, and organization prevented; producing precisely the appearance described by Mr. Gulliver.

It now remains to state my own views of the nature of this deposit. It is with the greatest diffidence that I attempt what some of the greatest men who have ever adorned our profession have failed to accomplish, through a long life of patient toil and investigation, devoted to the subject. But they have cleared the way, and but little is left to do now but advance upon the smooth road they have made.

I consider tubercle to be the solid matter of the cutaneous excretion, especially of the sebaceous follicles. This secretion not being expelled by the natural emunctories, is retained in the blood until, in the attempt to eliminate it through an unnatural channel, it is deposited in some other excretory organ, where its fluid matter being absorbed, it becomes a tubercle.

It will be first necessary to show that the secretion of the skin is of sufficient importance to produce this effect when retained.

"It appears," says Dr. Carpenter, "that at least one hundred grains of effete azotized matter are daily thrown off from the skin When the exhalation of the skin is completely checked by the application of an impermeable varnish, the effect is not, as might be anticipated, an elevation of the temperature of the body; on the contrary, it is lowered, in consequence, it would appear, of the interruption of the aeration of the blood through the skin, which is a function of such importance in the lower animals, and of no trifling account in man. And in a short time a fatal result ensues."—*Elements of Physiology*.

The amount of the cutaneous respiration has never been precisely determined, but it will hardly be doubted that Dr. Carpenter has overrated its importance, when he considers that death takes place from its interruption. Even one whole lung may be rendered impervious, and still life may be preserved; and the fact which settles the question entirely, is, that the body may be immersed in water containing but little air, or even in water from which all the air has been expelled by boiling, and no appreciable inconvenience results, notwithstanding the "aeration of the blood through the skin" is suspended. It is singular that such an every-day experiment should have escaped so acute an observer as Dr. Carpenter.

It is plain, then, that death takes place in these cases, from the retention in the blood of the excrementitious matter ordinarily thrown off by the skin.

Of the amount of the *sebaceous* secretion alone, we can only conjecture, as very little light can be thrown upon it by the ordinary experiments for determining the quantity of the cutaneous secretion. It is not volatile, like the perspiration; it accumulates, and mixes itself with the epidermis; and the diminution of the weight of the body would no more show its amount, than it would that of the urinary secretion still retained in the bladder. But we are in possession of sufficient facts to show that it is very considerable. Any one who has been troubled with a dry, harsh state of the skin of the hands, and has attempted to relieve this by the rubbing on of any oily matter, must have been surprised at the quantity which may be made to penetrate the skin and disappear, before the natural state is restored. But the sebaceous secretion keeps the skin of the whole body constantly in this state. Those, also, who have "dry" hair naturally, and keep it, by the application of oily matter, in the state natural to others, will be able to judge of the quantity requisite to effect this object. When we consider the vast number of the glandulæ of the surface by which the sebaceous matter is eliminated, we shall not doubt their capacity to furnish all that is required, either for the good or bad effects ascribed to it.

The mucous membrane lining the bronchial apparatus and the alimentary canal, is but the inversion of the external tegument of the body, which it resembles in structure, and, to a great extent, in function; so nearly, that in the lowest animals there is no difference whatever between them, except the accident of position. This membrane is lined throughout its extent inwardly as well as outwardly, by numbers of minute glandulæ; those on the external surface being estimated, by Mr. Erasmus Wilson, at not less than seven millions in number. The action of all these glandulæ is depuratory or excretory. The secretion of none of them is destined to be reabsorbed, nor can it be retained in the blood without injury to the system.

No fact in physiology is better ascertained than that when the secretion of any organ, especially an excretory organ, is retained in the blood, an effort is made by some other organ, usually the one most nearly allied to it in function, to eliminate it (*Carpenter's Human Physiology*, p. 608).

Now, if the function of the skin is not properly performed, it is obvious that the mucous membranes will be the first to suffer; that is, if they do not perfectly succeed in supplying, by a vicarious or augmented natural action, the depuration ordinarily effected by the suspended function of the skin. It is from the overwhelming congestion with which they are affected, in the attempt to eliminate the secretion of the skin, that death takes place when the secretion of that organ is completely suspended, as by a varnish, for instance.

Is the function of the skin badly performed in phthisis? Formerly a pearly white skin was considered characteristic of the disease, or rather of the tubercular diathesis. But it is now said that too much stress was laid upon this peculiarity, as the disease very frequently attacks those who do not possess it. But when we look upon the skin as a *gland*, as a great depuratory organ, the retention of the secretion of which in the blood causes death in a few hours, it is hard to conceive that too much attention can be paid to its peculiarities in any disease. I believe all writers still recognize a *peculiarity*, a cognizable anatomical difference of structure from the healthy skin. It seems to be this, that the skin is harsh and dry. Let its texture be fine and white, or coarse and dark, it is uniformly dry and inelastic. It is easily washed clean; dirt does not closely adhere to it. In a word, the *sebaceous secretion is deficient*. I cannot do better than give the description of this peculiarity in the words of Sir James Clark:—

“The aspect of the countenance generally affords decisive indications of the presence of the affection; in early childhood it has a pale, pasty appearance. If the complexion be dark, the colour of the skin is generally sallow; if fair, it has an unnatural white appearance, *resembling blanched wax* rather than healthy integument. The cutaneous functions are rarely in a healthy state; the skin is either pale, soft, and flaccid, or dry and harsh, and frequently affected with eruptions. Its function of secretion is, in tuberculous subjects, always more or less deranged.”—*Cyc. of Pract. Med.*, art. CONSUMPTION.

If, upon examination after death from any disease, the liver, lining membrane of the alimentary canal, or kidneys were found in a state different from the healthy standard, this state would be considered as constituting a prominent feature in the pathology of the disease.

Even if there was nothing in those who inherit the diathesis indicative of a deficient development of the glandulæ of the skin, the causes which produce the disease are sufficient of themselves to point out its true nature. Everything which depresses the action of the skin tends to the production of tubercles. Everything which exalts its function acts as a preventive.

“Decidedly the strongest of the predisposing causes,” says Dr. Wood, “is inheritance;” [congenital malformation of the secretory apparatus of the skin.] “Next perhaps in the degree of influence is cold. Allusion is not here made to the vicissitudes of weather which so frequently occasion attacks of inflammation. Cold may act in this way as an exciting cause; but its most pernicious agency is probably connected with its long-continued application. * * * This fact has been strongly exemplified within my own observation.”—*Practice of Medicine*, vol. ii. pp. 104–5.

Could anything be stronger evidence in favour of the idea that the retained secretion of the skin is the cause of tubercular deposits? Is not this as nearly as possible reducing the condition of the subject to that of those who inherit the fatal peculiarity from their parents? All diseases attended by a great disturbance of the function of the skin are notoriously apt to be followed by phthisis. The exanthemata—smallpox, scarlatina, and more especially measles—fevers in which there is much dryness or constriction of the skin—and diabetes, where this reaches the greatest extent, are extremely liable to be followed by consumption.

The evidence deduced from the juvantia is not less strong. The influence of a warm, dry climate is too well known to require it to be dwelt upon. And its influence in developing the glandulæ of the skin, where they are deficient congenitally and in stimulating them where they are depressed or torpid, is equally well known. (See *Carpenter's Elements of Physiology*.) How can a warm climate affect the fibrin of the blood? The hygienic means next in importance, if not superior to the last, is vigorous exercise in the open air:—

“Vigorous exercise and free exposure to the air are by far the most efficient remedies in pulmonary consumption. It is not, however, that kind of exercise usually prescribed for invalids—an occasional walk or ride in pleasant weather and strict confinement in the intervals—from which much good is to be expected. Daily and long-continued riding on horseback or in carriages over rough roads is perhaps the best mode of exercise; but where this cannot be commanded, unremitting exertion of almost any kind in the open air amounting even to labour will be found highly beneficial.”—Dr. Parrish—quoted by Wood, *Practice of Medicine*, vol. ii. p. 111.

“They are most fortunate,” says Dr. Wood, “who are so situated as to be compelled to exert themselves. It has often been observed that consumptive patients entering the military service have entirely surmounted the disease.”

“Dr. Guy found that in the close workshops of a printing establishment, the compositors whose employment requires no exertion fall victims to phthisis in the proportion of 44 to 31½ per cent. of the pressmen, who, while breathing the same air, use active bodily exertion. Similar exercise in pure air would have much more salutary effects, the deaths from the same cause in out-door labourers not exceeding 25 per cent.”—*Williams's Princ. of Med.*, p. 53.

Can the efficiency of active exercise in the open air be explained in any other way than by its powerfully stimulating effect upon the glandulæ of the skin?

Other means having the same effect are equally lauded:—

“No remedies of this class have appeared to be so generally useful as counter-irritants of the milder class—*rubefacients extensively* and regularly applied by friction over a large surface of the body.”—*Williams's Princ. of Med.*, p. 310.

Does not the difference in the complexion of men and women fully explain the greater liability of the latter to consumption? It is interesting to notice the connection between the habits of the pig—his wallowing in the mire and choking up the pores of the skin, and his great liability to scrofula, to which he has given the name.

Natives of a cold country going to a warm one suffer less from consumption than the natives of the latter; and natives of a warm climate going to a cold

one suffer far more. This is true of other animals as well as man. The action of the skin is exalted in the one above its natural standard, and depressed below it in the other.

Is not the thinness of the *alæ nasi*, formerly considered one of the characteristic symptoms of the disease, owing entirely to the want of development of the sebaceous follicles usually so abundant in that situation?

But as to the nature of tubercle itself. Tubercle is evidently a foreign matter in the blood. Even if it is "degraded lymph," it is a foreign matter none the less; for dead or dying fibrin has no place in the blood. Besides, all its habits, so to speak, so nearly resemble those of an effete matter retained in the blood, that it seems only to have been the difficulty of telling how it came there, that has prevented *all* from considering it such. It is perfectly evident that it has its origin in the system itself, for it is found under circumstances (as in the fœtus) where its introduction from without is scarcely possible. And whenever the diathesis is acquired, it is through the agency of depressing causes acting upon the general system.

If there has been raised, by the facts I have just mentioned, a presumption in favour of the retained secretion of the skin being the cause of tubercular deposits, this presumption will not be lessened by an examination of the deposits themselves, nor of the rules which seem to govern their distribution.

The sebaceous secretion of the skin has not been analyzed with sufficient accuracy to determine its precise nature: "It is oil, but not oil alone;" and as little is known of the nature of the solid constituents of the other secretions of the skin. It is, therefore, impossible to demonstrate chemically their identity with tuberculous matter. But enough is known to show a very strong probability of this identity.

Tubercle consists for the most part of minute granules, which either consist of, or are very easily converted into, fatty matter.

"Every gradation may be found between euplastic and aplastic deposits; the cells and fibres which are the representatives of organization,* diminishing in number and completeness, and the material becoming more granular and amorphous, or abounding in fat *globules* in proportion as the deposit is degraded, until in opaque, crude, or yellow tubercle it is altogether aplastic, *consisting of a mere aggregation of granules and fat globules* with mere traces of the remains of cells."—*Williams's Princ. of Med.*, p. 300.

Here at least we see one of the constituents of this secretion in the deposit; and it is the only one that is known with certainty. It is very probable that this constituent of the sebaceous secretion can at any time be detected in the blood of phthisical patients:—

"The fibrin of the blood presents under the microscope a predominance of granular matter and fat *globules*."—*Id.*, p. 113.

Is not this a stronger proof of the truth of my theory than the discovery of lymph-corpuseles in the substance of tubercle is of his?

* I have already shown how these come to be there.

The deposition of fat in the liver, causing what is termed "fatty liver," so common in this disease, may also be regarded as proof that the great fat-secreting gland, the skin, is out of order.

But the evidence afforded by the place and manner of the deposition of this tuberculous matter is stronger still. The sebaceous secretion not being tolerated by the system, an effort is made to free the blood of it; and with Dr. Carswell, I believe this is always done *through the mucous membranes, or internal prolongation of the same membrane which should normally excrete it.* If the quantity to be got rid of in this way is small, or the cause obstructing the excretion of the skin be of short duration, no doubt this effort is often successful. There are perhaps but few persons who do not at times void through the mucous surfaces matters which are normally got rid of through the skin without feeling any inconvenience from it. But where the amount to be excreted in this way is considerable, there will always be more or less disturbance of the function of the lungs, kidneys, or alimentary canal.

This may not be considerable, and will soon pass off if the skin resume its office. But if the cause of depression be permanent in its nature, or if, during its action, the secretory power of the mucous membrane be weakened or suspended by inflammation, or any other cause, a deposit takes place.

The reason why the lungs are oftenest the seat of this deposit is very obvious. It may be that the closer analogy between the skin and lungs, than between the skin and any other organ, causes a greater quantity of the secretion to be directed to the bronchial membrane than to any other. But the anatomical structure of the lungs is fully sufficient to account for the frequency of the deposit in them. From all other mucous surfaces, any effused matter would find a ready outlet, by the force of gravity alone, or gravity aided by peristaltic action; but here, gravity, which is the only force acting, unless enough be excited, causes the effused fluid to descend to the air-cells, where it accumulates; its watery parts being absorbed almost as soon as it reaches the cells, we have a tubercle. Here it grows by attracting its like from the blood, as Dr. Williams has well shown. (*Principles of Medicine.*)

This appears far more plausible than Dr. Williams's reasons for the frequency with which the lungs suffer: 1. "Their great vascularity and the large quantity of blood that passes through them, which makes them largely partake of any disorder in the condition of this fluid." If this were the case, they ought equally to suffer in chlorosis and scurvy, or even in rheumatism, for these and many more diseases depend upon a disordered condition of the blood as much as does phthisis. 2. "Their being a chief seat of the formation of fibrin; that principle being more abundant in arterial than in venous blood." Fibrin is more abundant in arterial than in venous blood, probably because before it becomes venous it has to traverse some organ, which takes from it sufficient fibrin for its wants, but gives none to it in return. Dr. Williams has very conclusively shown, in the same work, that

fibrin is very rapidly formed in an inflamed part, without the agency of the lungs. 3. "The softness and yielding nature of their texture, which permits effusions to take place more readily than denser textures do." Other effusions seem to take place more readily in areolar tissue. 4. "Their exposure to external causes of disease." The lungs are hardly more exposed to external causes of disease than the alimentary canal, and, laying aside tubercle, are hardly more often diseased.

But the lungs are scarcely ever the seat of a deposit without other organs being affected also. The kidneys are almost invariably implicated; not always, however, by a deposit, for, excepting in the cortical portion of the kidney, the matter has free egress merely by the laws of gravity; but the structure of the gland is often spoiled by its being compelled to eliminate another secretion than its own. The connection of Bright's disease with the scrofulous constitution has been noticed almost as long as the disease itself. This disease we can produce at will, merely by partially obstructing the cutaneous secretion by *varnish* or otherwise; and I am more convinced of the identity of the granular matter in this "degeneration" of the kidney with the granular matter of tubercle, from the identity of the causes producing it, than from all the observations and experiments yet made in relation to it. I consider Bright's disease to be merely an abortive attempt, on the part of the kidneys, to eliminate the sebaceous secretion of the skin, which, instead of being voided, is deposited in their secreting structure; its peculiar appearance being due to that structure. This view receives confirmation from the great increase of oil-globules noticeable in the epithelium-cells of the kidney in this disease, which Dr. George Johnson considers the first pathological change which takes place in Bright's disease.

The albuminuria is, I suppose, caused by the congestion this deposit gives rise to, in the same manner as it would be by congestion from any other cause.

The gastro-intestinal mucous membrane was found healthy by Andral in only one-fifth of the cases examined by him. But it is not to be supposed that it did not excrete tubercular matter, excepting in those cases where signs of disease were apparent after death. It is only when the matter exists in the blood to such an extent that the intestinal follicles are spoiled in the attempt to eliminate it that appreciable lesion can be discovered. And this membrane can no doubt excrete it for a long time, and in considerable quantity, without any such result taking place. Just as in slight biliary obstructions, the colouring matter of bile is exuded from the kidneys, mucous membranes, &c., before it accumulates in sufficient quantity in the blood to be deposited in the textures generally.

There is no one of the mucous surfaces which may not thus excrete tubercular matter. The frequency with which discharges take place from the eyes and ears of scrofulous children is no doubt owing to the elimination by the membranes lining these parts of tuberculous matter. This discharge only requires

to have its watery, or, to speak more properly, its *absorbable** parts removed to constitute genuine tubercle.

Andral relates a case in which it is certain that this matter was secreted from the membrane lining the prepuce, in a man having phimosis.

Any disease of one of the mucous surfaces, as inflammation, by diminishing or suspending its excretory power, will throw an additional burden upon the portion which remains sound, besides leading to a deposit in the inflamed part, in consequence of the absorption of the liquid portion during the stagnation of the blood which takes place.

Consumption of the lungs frequently does not manifest itself, in constitutions in which there is an evident predisposition to it, until after an attack of this description.

"We have often seen cases of pulmonary phthisis commence during convalescence from gastro-enteritis. Before the attack of the intestinal inflammation, the patients had no cough, nor was there any symptom to make one apprehend in them the existence of a pulmonary affection."—*Andral's Medical Clinic*, vol. ii. p. 232.

Inflammation of the lungs themselves is still more apt to be followed by a deposit of tubercular matter than inflammation of any other organ. It acts both by diminishing the excreting power of their mucous membrane, and by inducing a stagnation of the blood, by which the absorption of its watery parts is facilitated. It is in this latter way that the deposit is so often left among false membranes and the other products of inflammation. A deposit having once formed in the lungs, it is easy to see how much more difficult it would be to get rid of it than if it had occurred in the parietes of the alimentary canal, or in any part of the urinary apparatus, excepting perhaps in the cortical structure of the kidney.

In all inflammatory diseases, the calls upon the mucous membranes are greatly increased by the dryness, harshness, and constriction of the skin, denoting partial suppression of its function. This is the case also in fevers, and still more so in the exanthemata, all of which hasten the progress or determine the development of tubercles. The peculiar ill effects of measles is explained by its not only involving the skin, but also the bronchial and alimentary mucous membranes. It is doubtful if any disease affects an equal extent of dermoid tissue, and no one certainly is so apt to be followed, in the predisposed, by phthisis.

The lymphatic glands are said by Louis to be only second to the lungs in the frequency with which they are involved in tubercular disease. I do not believe, however, that they are ever attacked primarily, or, if so, only in those extremely rare cases where the matter abounds in the blood to such an extent that it may be deposited in any tissue, like the colouring matter of bile in jaundice. Their secondary implication is very easily accounted for: inflammation taking place in the membrane from which the effusion is taking place,

* I mean by the *veins*; the entire matter may be absorbed by the lymphatics.

it is arrested and absorbed by the lymphatic vessels, and carried to the nearest gland, where it is retained like any other foreign matter introduced into these vessels.

In the lungs, owing to their anatomical structure, the effused matter is presented in a condition favourable for absorption without the agency of inflammation. Hence the frequency with which the bronchial glands are affected with tuberculosis. In some rare cases, all the effused matter is taken up, and the glands alone are found diseased, the lungs being perfectly healthy. (*Andral and Carswell.*)

But though inflammation does not seem to be necessary to induce tuberculosis of the bronchial glands, they are nevertheless much more certainly affected when it does occur. Inflammation seems to increase the activity of the lymphatic system in a remarkable degree.

The mesenteric glands are, I believe, never the seat of tuberculosis excepting in the course of enteric inflammation. This latter may, however, be very slight, and leave no trace of its existence in the dead body, though usually indications of its presence may be detected.

The frequency with which the lymphatic glands of the neck are affected is owing, I believe, to their being the only superficial ones (except those of the groin) whose vessels arise from the surface of mucous membranes.

Inflammation of the gums from teething, a carious tooth, or from any other cause, eruptions around the mouth from gastric irritation, or any inflammation of the conjunctiva or external meatus of the ear, may give rise to absorption of tubercular matter by the lymphatic vessels which are so plentifully distributed upon these parts. The inflammation of a single Meibomian gland will often cause the tumefaction of the glands situated on the side of the neck.

After a deposit has taken place in a gland, there is no need to suppose that it can increase only by the absorption of new matter. As in other situations, tubercle may here attract its own material from the blood, and continue to enlarge, even though the membrane, from which it was originally absorbed, may have resumed its healthy action, or even after it has been completely destroyed, as in the case from Andral, referred to above, where the effusion was upon the prepuce.

This appears to me much more simple than the explanation usually given, that inflammation is excited in a gland, and assumes the tubercular character from the peculiarity of the diathesis.

When suppuration takes place in a scrofulous gland, and it discharges its contents externally, it forms a ready outlet for more of the excretion; its being constantly poured out by the pyogenic membrane which lines the fistulæ which penetrate the gland prevents the occurrence of the healing process. Tubercular affections of the lymphatic glands are much more common in children than in adults, in consequence of the greater activity of their lymphatic systems, or perhaps from the greater frequency with which their

mucous membranes are inflamed. There are cases where the matter of tubercle is effused upon other tissues than the mucous, but always in those in which pus or other morbid products are usually deposited, as the brain, inter-muscular cellular tissue, &c. These cases only go to prove that tubercle is a foreign matter deposited from the blood, but throw no light on its nature.

It is hardly necessary to state that my only aim in this essay is to direct the attention of the profession to the view I have advanced of the pathology of tubercular deposits, and not as a complete treatise on the subject. I have thrown together the most prominent features of what I believe to be the true pathology of tuberculosis, leaving it to others to accumulate the evidence calculated to establish or disprove its truth, and to apply it to the explanation of all the leading phenomena connected with, or arising out of the deposit of tubercular matter in the several tissues and organs of the body.

I think I have shown that the nature and importance of the secretion of the skin are sufficient to give rise by its deficiency of suspension to the accumulation of tuberculous matter in the blood; that in those individuals in whom consumption is hereditary, there is often a congenital deficiency of the sebaceous follicles; that the disease can at any time be produced or aggravated by causes which depress their action; and prevented or relieved by causes which exalt it; that the only well-ascertained product of the secretory action of these follicles is found in large amount in tubercle; and that it is deposited in precisely such situations as we would be led to suppose, upon general principles of physiology, that the retained secretions of the skin would be.

This theory has at least the merit of being consistent with all the phenomena of the disease; of explaining the action of the causes which produce it upon established physiological principles; of explaining its hereditary transmission by the same law which causes children to resemble their parents; of redeeming our practice from empiricism, and making it rational, and most important of all, of *explaining* the efficiency of hygienic means, and thus impressing the necessity of them more effectually than any amount of mere recommendation could do, even though this were founded upon the largest experience. It differs from the views of Andral and Carswell, by showing the nature and source of the "peculiar secretion," of which they speak; and seems, upon the whole, far more simple and definite than any other yet advanced.

WHITEVILLE, *Columbus County, North Carolina,*
March, 1852.

ART. X.—*Phosphate of Lime in Phthisis.* By S. KNEELAND, Jr., M. D.

Read before the Boston Society for Medical Improvement, April 26, 1852.

THE great number of remedies which have been recommended, tried, and found wanting in the treatment of phthisis, justifies the medical world in looking with distrust upon any new article which may be advanced as possessing power against this fatal disease; but, while we are incredulous, we may also be hasty and unjust to condemn, before a careful examination and a systematic trial have enabled us to judge knowingly in the matter.

Without pretending that the phosphate of lime is of any advantage in the treatment of phthisis, it seems to me that there are chemical and physiological reasons why it may be beneficial in this disease; at any rate, there is a singular coincidence, to say the least, between this remedy and the product which has been generally considered as nature's attempt to cure by a chemical transformation of tubercle.

Both albumen and fibrin, the chief original components of the tissues, contain about two per cent. of phosphate of lime; liquid albumen dissolves this salt, which may be separated from it in its coagulated state; so fibrin, when burned, leaves a portion of this salt. It is generally agreed by physiologists that the deposition of tubercular matter is a perverted or abnormal form of the process of nutrition, so that albuminous tubercle is deposited in the tissues instead of the latter being replaced by organizable fibrin. Now, though this conversion of albumen into fibrin, necessary for normal nutrition, may be more of a *vital* than a *chemical* process, and though albumen and fibrin have the same chemical constitution, and, so far as we know, the same proportion of phosphate of lime, still this salt may have an important influence on the form which the tubercle may assume. From an essay in the *London Lancet*, on the "Physiology and Pathology of the Phosphate of Lime," it appears that this salt exerts a singular influence over the formation of cells; and hence it was recommended and used with success in many depraved conditions of the system; keeping up a normal nutrition and counter-acting emaciation. This is in accord with the condition of the blood in phthisis, which, according to Andral and Gavarret, though it may be rich in fibrin, is deficient in plasticity, forming what is called *cacoplastic* or *aplastic* tubercle, according to the presence or absence of organization in this product. By the above terms are expressed the two great forms of tubercle, viz.: 1, the "semi-transparent, milky, gray, and tough yellow forms," in which there are distinct traces of organization in the form of cells and fibres; which, however, never reach any higher organization; hence termed *cacoplastic*. 2. The "opaque, crude, yellow" tubercle, which is absolutely structureless, resembling a granular albuminous coagulum; hence called *aplastic*. The former has a tendency to contract, the latter to soften. If, then, this influence of phos-

phate of lime over cell-growth be established, it does not seem unreasonable to connect the different degrees of the plasticity of the blood, and the different degrees of the organization of tubercle, with the variable amount of this salt in the circulating fluid. I am not aware that any chemical analyses have been made to determine this point; though the difference might be too minute to be detected by the minutest investigations at present practicable.

There is another point of view from which it is interesting to examine phosphate of lime in connection with tubercle; that is, in connection with the cicatrices and calcareous formations so often found in phthisis, and usually recognized as an attempt at cure on the part of Nature.

Laënnec long since expressed the opinion that tubercular disease may be arrested in its second stage by transformation into calcareous matter, or by cicatrization. The fact of these concretions cannot be denied; M. Roger found them in the lungs of old people, fifty-one times in one hundred, in subjects taken at random. The same author (*Archiv. Gén. de Méd.*, 1839) shows the passage from one to the other, from tubercle to a chalky concretion, and from this last to a calcareous mass; and, what he considers remarkable, the transformation begins at the centre. M. Valleix has seen the three stages, in concentric layers, in the same tubercle; a calcareous centre, a cretaceous layer outside of this, and a layer of crude tubercle externally.

The chemical analysis of crude unorganized tubercle is: animal matter 98 parts in 100; muriate of soda, .15; phosphate and carbonate of lime, 1.85; and traces of oxide of iron. In the concretions the chemical elements are the same as in tubercle, but their proportions are very different; while tubercle has 98 parts in 100 of animal matter, the concretions have only 5; the latter are principally made up of *phosphate of lime*, while tubercle has only two per cent. of it, like albumen and fibrin. This looks very much like a calcareous impregnation of tubercle, or a chemical transformation from an excessive deposit of phosphate of lime; and this without the softening and discharge of the tuberculous matter.

The cicatrices, seen often at the summit of the lungs, were also considered, even by Laënnec, as efforts of nature to heal the excavations in the lungs by depositing in excess the phosphate of lime necessary for the formation of the cartilage of which the cicatrices of the lungs are usually formed. At any rate, we find cicatrices of caverns at the summit of the lungs, after the discharge of the softened tubercle. The lining false membrane becomes more and more cartilaginous, the walls are brought into contact, forming a fibro-cartilaginous fistula or hollow cicatrix, which may or may not contain concretions of phosphate of lime; though, if permeable to the air through any bronchial tube (of which the openings into the cavities are usually obliterated), we should expect to find this salt, which is almost always present in the fluids of sinuses and fistulae communicating externally. According to Louis, these cicatrices are a rare and happy termination of tubercular cavities.

Many cases are on record of individuals having recovered after having pre-

sented unequivocal signs of phthisis, and who, dying years afterwards of another disease, have presented these calcareous concretions at the summit of the lungs. In view of such cases, it was asked by Andral, many years since, "Is it not possible that, the calcareous phosphate having become predominant, the secretion of tubercle may be arrested?" As it were, extinguished?

As almost all the cases of cicatrization and calcareous transformation have been found in old persons in whom tubercles are rare and few in number, it may be objected, with Louis, that there is no proof that these few tubercles, of which we find the traces and alterations, were not developed at an advanced age, when the vital power of the organs is diminished, and when such deposits are common in other parts of the system; making phthisis, as far as these facts go, curable only at the age when it is least common and least to be feared. It may be answered that these pulmonary concretions are different from the ossifications common in old people; they present no traces of a fibrous character, as do the latter; they also contain only five per cent. of animal matter, while the latter contain thirty-five per cent.

We find, then, phosphate of lime, so essential to vegetable life, playing a very important part in the production of animal-cells, and in this way influencing the amount of organization in tuberculous growths; we find it in the cicatrices of pulmonary caverus—and especially we find it in the concretions, which are acknowledged to be transformed tubercle, nature's successful attempt at the cure of phthisis. We hence naturally inquire, cannot medical art transform a tubercle, and cicatrize a cavity?

Allusion may be made here to an interesting case of resolution of tubercle under the use of cod-liver oil, reported by Dr. Chas. E. Ware, to the Society, Aug. 25, 1851, and published in its "Extracts," p. 171. In this case, which proved fatal from disease of the bladder, there were found in the upper lobes of both lungs, "numerous cretaceous masses, some of them quite large, with the substance of the lung contracted and hard about them; no crude tubercles or cavities." The patient was exceedingly reduced, and continued the use of the oil for "four months, all the time failing, before she began to experience any benefit."

This patient was only thirty-five years of age, showing that these cretaceous masses may, and doubtless often do, occur in other than old people. He alludes to three other young women, in whom there was hardly a doubt as to the existence of tubercle, who took the oil for nearly as long a time, and with great improvement.

In this case, cod-liver oil was used, and not phosphate of lime; but cod-liver oil contains phosphorus in larger proportion than it does iodine, to which last substance the efficacy of the oil was formerly supposed to be due; this phosphorus, meeting lime in the system, may thus have been instrumental in transforming the tubercles. How much of the cerebral and urinary trouble may have been caused by this minute portion of phosphorus, long continued, may be worthy of consideration, especially if the well-known action of this substance

on the nervous and genito-urinary system be remembered; and if similar symptoms should be observed in other cases of the administration of the cod-liver oil, or the phosphate of lime, singly or combined.

Of the influence of cod-liver oil, in causing a deposition of phosphate of lime in the system, we have ample evidence from its effects in rickets; indeed, it was from its good effects in this disease that the medical profession adopted it from the Baltic fishermen, about 1824. In rickets, there is a deficiency of phosphate of lime in the bones to such an extent often that they may be bent almost like wax, as many have seen in the wards of M. Trousseau; the use of the oil for a few weeks acts like magic in giving solidity to the bones by the deposition of the required phosphate of lime; and this we think it can only effect by the phosphorus it contains.

The case of Dr. Ware's would also point to a long-continued use of the phosphate of lime, before deciding on its uselessness; his patient used the oil four months before she perceived any benefit from it.

For the reason that the *carbonate* of lime enters into the composition of these concretions; and, from Vallein's statement above alluded to, possibly forms the first and transitory stage of transformation into the phosphate, this salt may also be of use; it would seem that the carbonic is replaced by phosphoric acid in the completely transformed tubercle; if the transformation even into the carbonate of lime, supposing this anterior to the deposition of the phosphate, could be in any way favoured, a great point would seem to be gained in the aplastic tubercle. And, if the phosphate can add to the organization of tubercle, by increased cell-growth, and thus favour contraction and cicatrization (of which as yet we have not sufficient data to judge), we have certainly great cause for hope.

It really seems that a careful examination and systematic trial, in the direction to which the attention of the profession is now turned, promise to reveal important facts, if not to discover how to prevent and even to cure this frightful disease. We know, possibly, *what* we want, and that is *phosphate of lime*; but we do not know how to get this substance exactly *where we want it*. Phosphate of lime, being insoluble in water, and very slightly soluble in liquid albumen, may very likely not be the form, however pure and fine it may be, in which it can best be introduced into the system; it may be better to separate its elements and give the phosphorus with or without lime, or phosphate of lime with cod-liver oil; or it may be better to obtain its introduction by the decomposition of other salts. Questions like these, and the effects it may have on the nervous, osseous, and vascular systems, on the urinary and other secretions, &c. &c., can only be determined by future investigations, perseveringly made.

Boston, May 1852.

ART. XI.—*Observations on the Generation of Uric Acid, and its Crystalline Forms.* By S. WEIR MITCHELL, M. D. [With five woodcuts.]

THE part played by uric acid in the healthy urinary secretions is so important, and its relations with the morbid states of that secretion so interesting, that it has been looked at with great attention, and lately studied in every point of view.

Deeply connected with its therapeutics, and of kindred interest, are its numerous and beautiful crystalline forms, surpassing, in elegance of figure, in colour and in variety, all other urinary crystals.

These forms of uric acid vary so greatly, that it would naturally be supposed that their distinctions of shape depend upon perceptible varieties in the chain of healthy or morbid processes which give rise to their formation, and that, by careful study, we might be able to trace out such relations, and make use of them for therapeutical and nice diagnostic purposes. Thus far, however, such has not been the case; and although some such alliances of cause and effect are in the highest degree probable, we have not been so fortunate as to elucidate them to any very valuable or available extent.

We are aware of the change from rhombs to squares, which occurs in the progress of old cases of lithuria; and we are also aware of the fact that a tendency to aggregate in masses, as seen without the bladder, is only too indicative of a similar disposition towards aggregation within it, and, consequently, to the formation of calculus.

At present, I would desire to call attention to a point in the crystallography of uric acid, which has attracted considerable attention, and given rise to several explanations. These views are mainly theoretic, and are unsupported by what may be termed crystalline analysis, on which I have chiefly relied in obtaining the results detailed in this paper.

According to Golding Bird, all the varieties of form, so constantly met with in uric acid, are referable to the rhombic prism. It is singular that these alone, of all the forms, we have not been able to reproduce, out of the body, by the addition of an acid to urine. Dr. Bird very properly states that the beautiful *fleurs-de-lis* crystals, which he has figured, are cubes or rhomboids, with indented edges. I have sometimes obtained these so slightly indented as to make them look almost identical with the primitive form.

Another and a very frequent variety, of crystalline shape, is the lozenge, found very often in natural deposits, and almost invariably present in the sediment of uric acid, caused by the addition of a *few drops* of hydrochloric acid to a large quantity of urine. When these lozenges are very thin, they present to the observer their elliptical faces; but when of greater thickness, they offer the appearance of cylinders, brilliantly lighted in the middle, and shaded at the two extremities. At times, and in a few specimens, two lozenges

Fig. 1.



Fig. 2.

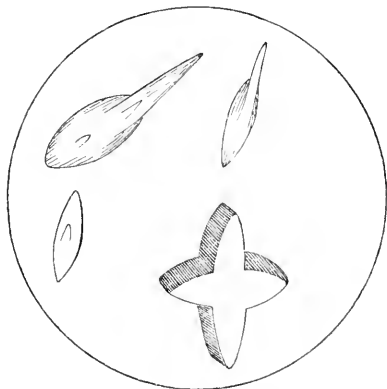


Fig. 3.

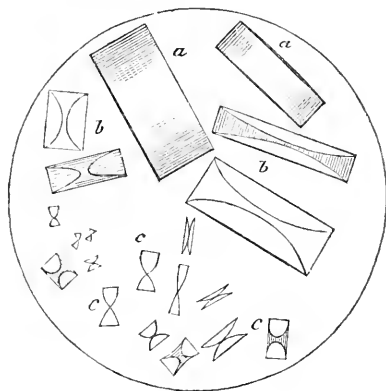


Fig. 4.

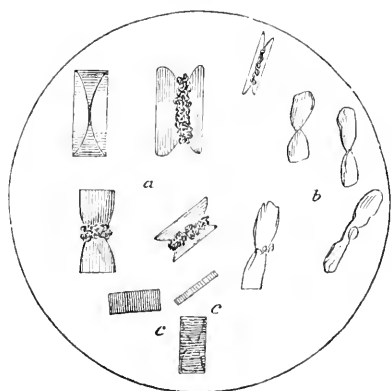
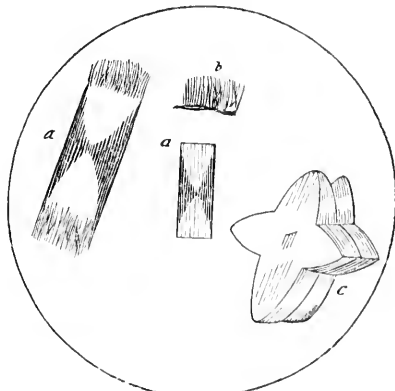


Fig. 5.



appear to have formed at right angles to one another, and to have become perfectly united during the process of formation. Such crystals offer a very beautiful starlike form, varying in thickness and in size, like the lozenges from which they derive their existence. This variety closely resembles the *fleur-de-lis* crystals. I have sometimes noticed, both in these and in the simple lozenge, a long spine, like an acute pyramid, projecting from one of the extremities of the lozenge, and resembling a marking of the same shape as that which is often seen upon the surface of the lozenges, and which has been already described and drawn by Bird. (See Figs. 1 and 2.)

The last variety to which I shall now allude, is the oblong plate, whose peculiar and beautiful markings have attracted so much attention, and received so many explanations. (Fig. 5, *a*.) Before referring to this, I wish, however, to describe some similar and equally curious markings which are, I believe, undescribed, and which belong to the lozenge-crystals above mentioned. I hope, by these means, to explain satisfactorily the crescentic curvatures of the tabular crystals, and to cast some light upon the primary forms of uric acid deposits.

When a well-formed lozenge is placed upon its side so as to present to the eye the appearance of an oblong figure, two distinct and very perfect crescentic marks are seen commonly touching one another at their convexities, and including within their curves the greater mass of the crystal to which they belong. (Fig. 3, *a*, *b*.) These markings rarely show well in such crystals as belong to natural deposits, and in most cases are entirely invisible, or to be seen only after long digestion in Canada balsam.

Having been much struck by this resemblance to the curves on the faces of the tabular variety, I have been at some pains to ascertain the cause of the likeness. After numerous experiments, I believe I am able to explain these, as well as some other peculiarities of uric acid deposits. The very small size of the bodies with which we have to deal, as well as the necessity of conducting our researches under the microscope, renders it impossible to avail ourselves of the methods applicable in ordinary crystallography, and I was therefore obliged to use certain agents not generally employed.

In the course of these studies, I placed in each of four test-tubes about half an ounce of urine. To the first of these, I added one drop of hydrochloric acid; to the second, five drops; and to the third and fourth, ten and thirty drops respectively. At the end of thirteen hours, I examined the deposits in all the tubes. No. 1 presented a few very minute lozenges, pale, thin, and in many cases looking like little spheroids. Nos. 2 and 3 contained larger and thicker lozenges, while No. 4 presented, not only large lozenges, but a few well-formed tabular crystals. I now removed a drop of fluid from No. 1, and placed it on a slide to dry. As evaporation went on, the acid naturally became more concentrated, and when, after drying it, I moistened the plate with water, and placed it under the microscope, I was surprised to see the field covered with singular little crystals. These were shaped precisely

like an hourglass, or like two half spheres, placed with their convexities in contact. The outlines of these bodies resembled precisely the marking on the large lozenge-crystals, and although varying a little in their degrees of curvature, were of the same type throughout. I next observed that some of them had the space between the two half spheres filled more or less by what I have since concluded to be minute acicular crystals. In a few, this space was completely occupied, and the general form was then seen to be a lozenge, with curves due to its primitive character, and with elliptical surfaces upon the two ends. In the course of time, most of the crystals underwent a like change, and the hourglass form disappeared altogether. (See Fig. 3, *c.*) I have retained some of these crystals, but I have not yet been able to reproduce others of a like character, although I have made many efforts.

I next placed a few well-formed lozenges under the glass, and, adding a drop of diluted nitric acid, watched the process of solution. In a few moments, the acicular structure between the two curves began to give way, being attacked most easily on account of its loose composition. While it melted rapidly, the denser primitive forms remained untouched, and, finally, the crystals presented a beautiful hourglass shape, encircled in some cases at the apices of the primitive forms by a black band. This appearance was due to the irregular and uneven surface of the yielding fibrous structure, which refracted the light so as to appear black. In others, the hourglass was left naked, and, in some, the corners were rounded off by the continued action of the acid. (See Fig. 4, *a*, *b*.)

In my final experiment, I placed some lozenges of uric acid in water, and heated them slowly. On placing these beneath the microscope, the surfaces which represent oblongs were seen to be marked with dark lines showing very beautifully the form of the acicular crystals as they lay agminated about the primitive nuclei. (Fig. 4, *c.*) I do not rely greatly on this appearance, since I have not found it uniform, the crystals often becoming striated in the other direction. It will thus be seen that little doubt is left as to the origin of the curves on the lozenges, and I believe I can show that the tables owe their marks to a like cause. From repeated observation, I have come to the conclusion that they are in fact large lozenges, of no great thickness, but having an oblong or square surface, on which are seen the marks of their primitive form, and around which the acicular crystals have collected, clothing it completely. Upon either extremity, a cluster of such needles has formed perpendicularly to the elliptical face of the crystal, and can often be broken off in mass from the main body. (See Fig. 5, *a*, *b*.)

I have thus obtained a knowledge of the form of these crystals by synthesis, by analysis, and by the aid of heat.

On reference to *Bird on Urinary Deposits*, it will be seen that he suspected these crystals to be compound, and indeed suggested what he believed to be their ultimate form, which he referred to the union of two acute rhombs superimposed laterally. He also states that Dr. Burton, of Walsall, ascribes

them to the union of two rhomboidal (?) figures, surrounded by acicular crystals; an opinion which is very nearly correct, but for which he gives no reasons. However arrived at, this view is very ingenious, and very close to the truth. Neither of these gentlemen seems to have noticed the curves on the lozenges, which gave the key to those upon the tabular variety.

It is highly probable that observation of some of these curious hourglass forms, misled Dr. Fricke, of Baltimore, into the belief that the dumb-bell crystals of oxalate of lime were forms of uric acid, with which they have, in reality, very little analogy. In the early part of this paper, I have alluded to a stellar form of uric acid, the result of the conjoined growth of two lozenges placed at right angles to one another. I may add, that they sometimes exhibit beautiful markings when rolled on their sides, and even show the indentations resulting from the ultimate forms of their component lozenges. (See Fig. 5, c.)

There are some other remarks in connection with the crystallography of the urine which I would wish to add, but I reserve them for a future communication.

ART. XII.—*Report of Cases of Operative Midwifery, with the particulars of a novel operation.* By AUGUSTUS K. GARDNER, M. D., Fellow of the Mass. Med. Soc., N. Y. Acad. of Med., District Physician of N. Y. Lying-in Asylum, &c. &c.

THE following cases, in most of which I have been called upon to operate for others, have occurred since January 1, 1852, and, as they contain something peculiar (and in one of which I performed a novel, and I will venture to predict for the future, a common, operation), I have drawn them off from my note-book, with some slight amplification.

CASE I.—*Delivery by Forceps—Elongated Os.*—January 1, at 6 P. M., I was called to see Mrs. —, 17 Doyer Street, a large, muscular, healthy woman, in her first confinement. Reports herself twenty-two years of age, but apparently more. She was taken ill on Monday, December 29, when she had severe pains, and on Tuesday states that the membranes ruptured. She sent for Mr. Austin, a young student of medicine, of considerable attainments, under whose care I found her on Thursday evening. The os was apparently entirely effaced; but, on careful examination, it was found that it was dilated to about the size of a shilling, while the neck, thin and smooth, lay closely upon the presenting vertex. The pains were exceedingly strong and propulsive.

Friday, 10 A. M. The patient had taken one grain of opium every hour during the night, but without causing sleep, or quieting, in any apparent degree, the pains. Find the os dilated to the size of a teacup-top, edges hard and like a cord. Head descended a little.

12, midnight. Pains continued during the day with no apparent change.

Saturday, 9 A. M. The os somewhat more dilated, but not enough to allow the head to pass; edges still "cordy." Pulse considerably accelerated, perineum very firm, and vulva dryish and hot.

12 M. The os offered little or no impediment to the advance of the head, which presented in 1st Baudeloeque.

5 P. M. The labour being still restrained, Dr. Simmons being present, with Mr. Austin, I proceeded to administer chloroform; and applied the short forceps, and without much difficulty affixed them to the head, though impeded somewhat by the delirious movements of the patient when not completely under the influence of the anæsthetic. Considerable force was requisite in the traction, so much as to bend one of the blades of the forceps (which I had repeatedly used previously) nearly straight. A healthy and vigorous female child was safely delivered, who *viva voce* immediately informed us of the fact.

It being subsequently necessary for the removal of the placenta to introduce the hand, I found that it had entered a *cul-de-sac*, which prevented further advance. On investigation, this was found to be caused by the os uteri, thin and elongated to nearly four inches, and that the hand had passed external to it, and between it and the vagina posteriorly.

The woman had no subsequent inflammation, and was up on the fourth day. On the second day after, while the child was in the hands of an attendant, it was taken with a slight convulsion, scarcely noticed at the time; it was subsequently placed on the arm of the mother, where it nursed vigorously until both fell asleep. On the mother's waking the child was dead. As I felt a slight crack when the instrument slipped, from the bending of the blade, I presume that from thence may be traced the cause of its subsequent early death. No *post-mortem* was permitted.

CASE II.—Ineffectual Attempt to apply the Forceps—Delivery effected by Craniotomy, &c.—Peritonitis—Copious Flooding on the sixth day.—January 12, 2 P. M. Was called to see Mrs. S——, 41 Anthony Street, by Mr. Mattheson, of Syracuse, N. Y., an advanced student. Patient was taken ill at 8 o'clock the previous evening. She was previously the mother of two children, one dead-born. She was a weakly woman, aged about 40. The two rooms which she occupied, in common with two other families, containing numerous children, were filthy in the extreme, and the smell was most nauseating.

On examination, the presentation was found to be the occiput, but the position was not so easily diagnosticated. It appears to be the occiput to the left iliac posterior—the forehead thus under the pubis and to the right, but on delivery it was found reversed—the occiput being to the right iliac anterior. There had been no advance in the progress of the labour since 5 A. M., the membranes having ruptured the preceding evening. Pains were constant, but of no expulsive power. Pulse rapid, and the general appearance of the woman bad.

I immediately proceeded to apply the short forceps. With considerable difficulty I passed each branch over the sides of the head, but was unable, without using unjustifiable force, to make them lock. I in vain removed each branch and reintroduced them, till finally and reluctantly I gave up the attempt.

At 5 P. M., I proceeded to open the head, and delivered a female child, which, without the brain and blood, weighed eight and a half pounds. The placenta was delivered by the pain which expelled the child.

At the time of delivery the abdomen was much tumefied, and tender to the touch. Peritonitis soon ensued. She was carefully treated by the student in attendance, under the direction of Dr. Alonzo Clark. The opium treatment was resorted to, but with little hopes of success in the horrible filthy room in which she lay. Still, on the fifth day, she appeared much improved; the tumefaction and tympanitis were subsiding, tenderness lessened, the pulse and respiration improving, when, on the evening of the sixth day, Mr. Mattheson, who had not in his assiduous attention been absent from her side more than two hours at a time since her attack, on coming into the room found her almost pulseless, and bathed in blood from an uterine hemorrhage, which had just supervened. Brandy and stimulants temporarily benefited; but in the course of the night, without any apparent subsequent hemorrhage, she suddenly died. No *post-mortem* was permitted; but the impression was that the treatment would have been effectual, had not this flooding, so unusual at this late period, supervened. Dr. Clark will doubtless allude to this case, in the report of cases treated by opium in heroic doses; and I, therefore, have not entered particularly into the minutiae.

CASE III.—*Case of Obstinate Rigidity of the Os Uteri, overcome only by dividing it, by cutting through either side.*—January 18. Was called at 6 P. M., by Dr. Anderson, to see Mrs. C——, 675 Water Street, with her first child. The patient was a large, muscular woman, and apparently about thirty years of age, though stating herself to be considerably younger. She had been in labour when I saw her twenty-four hours, and there was now no apparent advance in the labour during this time. The os continued rigid, notwithstanding that she had been bled ℥xvj , and had taken nauseating doses of tartar emetic, and several grains of opium. The pains had been frequent and strong.

On examination, per vagina, find the vertex presenting, os dilated to the size of a teacup-top, exceedingly firm and hard. At my suggestion, Dr. A. reopened the vein in the arm, and extracted ℥xvj , producing some dizziness of the head, but with no apparent effect upon the os. After remaining two or three hours without noticing any change, we administered two grains of opium, in a half hour another grain, and in another quarter of an hour a fourth grain, and left, with directions to repeat a grain every half hour until sleep was produced. She had felt no movement of the child during the day.

19th, 7 P. M. Patient took eight grains of opium before any effect was obtained, and slept till 3 A. M., the pains then recommencing with full vigour; which now have much diminished in force and frequency, indeed are but little expulsive in their character. Some chills are reported as having occurred during the day, and the patient's mind is somewhat affected—slight involuntary action of the muscles of the extremities. The os has dilated but little, and the edges are still thick and rigid. Vulva hotter and much drier than yesterday. The friends are urgent to have some operation performed, and Dr. Anderson proposes that the head be opened.

The only reason apparently why the labour does not advance is the rigidity of the os, and if that could be overcome it appears that the labour would go on to a speedy termination. But how to effect this desired result? All the usual modes had been fruitlessly exhausted. Mechanical dilatation by the fingers was impossible. A vigorous pain may perhaps lacerate the os. Lacerations of the os uteri are frequent. May it not then be cut? I remembered my previous case, where I divided the os in labour, when by a prolapse it was entirely out of the body (see a case in this *Journal*, October, 1846),

and determined to divide the os. The determination made, the act was easily accomplished. With a long pair of curved uterine scissors I made an incision laterally upon one side three-quarters of an inch long, on the other one and a quarter inches. Very slight hemorrhage ensued. The pains were revived by an infusion of secale cornut., and in about three hours a large putrid female child was expelled. The cord was so weak that it immediately separated from the placenta, which was delivered by introducing the hand, with little difficulty. The labour was delayed after the operation, by the head remaining nearly an hour on the perineum, after passing through the divided os, and the body not being delivered without much strenuous assistance. The occiput was to the right iliac anterior.

So rarely has any operation of this kind been recommended in treatises on midwifery, as taught in the schools, that I was not aware that it had ever before been performed. Even Dr. Churchill, who is generally so complete, does not mention it in his *History of Operative Midwifery*, and in his *Theory and Practice of Midwifery*; he says, paragraph 397, "I believe we shall rarely, if ever, fail in softening the cervix by some of the remedies I have recommended, and I must beg leave to enter my protest against more active interference."

Ramsbotham speaks in favour of the operation, though he evidently had never performed it. He writes, in his *Obstetric Medicine and Surgery*, "I should prefer operating on the os uteri, unless indeed there were present the most unequivocal signs of the child's death; and I should even hope for the patient's survival for some time, being cheered by the result of the last case detailed in the note, in which I have not the slightest doubt that a laceration occurred."

Blundell says: "Under all circumstances, if you must have recourse to instruments at all, you had better at once have recourse to the perforator."

Baudelocque says: "After a convenient delay, to ascertain that the efforts of nature cannot overcome the resistance, and the administration of proper methods to relax it, it must be cut in several places, as some practitioners have done. These incisions are preferable to rents, which might take place in it, and have never been attended with the same consequences."

Dr. Dewees, quoting the above, thus remarks: "The success of this plan has been verified, in this country, as the case of Dr. Thomas Archer most satisfactorily proves," where the "uterus, loaded with its contents, was pushed through the os externum; * * * * he, accordingly, made three cuts in the uterine circle, * * * each about two inches long; * * * no unpleasant symptom followed." This case is evidently very similar to the one reported by me in 1846.

Dr. D. also quotes Moschati, who made several incisions in the circle of the os uteri, 1827, with success.

Dr. Murphy says: "If these means fail, it becomes a question whether we should wait for the death of the child, in order to remove it by the crotchet, or incise the unyielding cervix. The former practice involves a sacrifice of life, but generally secures the mother from the injurious effects which may follow. The latter may be the means of preserving the child, but if the incision lead to a laceration of the uterus, the mother is at once placed in the most imminent danger of her life. The fear of such a consequence, it appears to me, has prevented any attempt being made thus to cut through this Gordian knot of difficult labour in its first stage; but whether this, like other operations, is only surrounded by chimeras of the imagination, which some bold spirit will dissipate, remains yet to be proved. Incision has been per-

formed without accident; the same may happen again; and I confess, in a case such as I have described to you, I should be more disposed to adopt the shorter course, in the hope of saving the child, than to wait until its death enabled me to remove it. This, however, is but an individual opinion, and needs support."

My old instructors, Chailly and Cazeaux, have written with more fulness upon the subject. Chailly says: "Aussi si cet état a résisté aux bains, à la saignée, à la belladonne, ce qui arrivera le plus ordinairement, on devra pratiquer des incisions sur les parties latérales de l'orifice, à l'aide du bistouri en croissant ou du bistouri droit boutonné, et mieux encore à l'aide des ciseaux courbes sur leur tranchant, et conduits sur le doigt jusque dans le col utérin. Il est utile, dans ce cas, de multiplier les incisions, pour qu'elles puissent fournir une assez grande dilatation, sans qu'on ait à craindre qu'elles ne se prolongent trop haut. C'est aussi pour éviter les conséquences de ce prolongement, qu'il ne faut pas les faire à la partie antérieure et postérieure de l'orifice. En effet, pratiquées dans cette direction, ces incisions pourraient intéresser la vessie ou le rectum.

"J'ai vu ce débridement de l'orifice suivi du meilleur effet, soit sur des femmes, où la rigidité pure et simple du col était le seul obstacle, soit sur d'autres chez lesquelles les parties étaient plus ou moins altérées.

"Chez une jeune fille âgée de dix-sept ans, qui vint accoucher à la clinique, le col à l'état sain d'ailleurs, était tellement rigide, qu'il ne céda qu'aux incisions. L'enfant fut expulsé en position occipito-postérieure non réduite.

"Les incisions furent encore le seul moyen de rendre l'accouchement possible, chez une femme âgée, mère de dix enfans; le col était tellement dégénéré que, de prime abord, il fut pris pour le placenta implanté sur l'orifice."

Cazeaux writes from less experience: "Si l'orifice externe rétracté est seul cause de la difficulté, on aura recours aux incisions multiples pratiquées sur le pourtour du col."

An extract from a recent note from Dr. John H. Anderson will show the result of the operation. "I am happy to inform you that the Water Street case does well, and enjoys excellent health at present. On the sixth day after the operation, she sat up in her chair without any symptom threatening inflammation, and from that day progressed rapidly, which affords me much satisfaction in the novel treatment for such a case."

CASE IV.—*Three Cases of Version.*—January 23. Mrs. —, a German woman with her second child, under the care of a midwife. I was sent for at 11 P. M. No one in the room could speak English or French, and I could not hold any communion with them. The midwife, however, by signs, stated that the case was a footling presentation. On examination, the hands and cord were presenting, and the occiput resting on the pubis occipito iliaque gauche transversale. The cord prolapsing more and more, I immediately turned and delivered without difficulty; a fine boy was born, which, with the warm bath and the inflation of the lungs, soon cried lustily. The right arm was swollen for some days, and looked very much like a dislocation of the radius, but disappeared without treatment. The woman did well.

March 3.—At the request of Dr. Bishop, I saw a German woman, corner of Ludlow and Delaney Streets, some two days in labour; membranes ruptured since morning. At 5 P. M., os fully dilated. The left hand presenting and the head felt to the left iliac. Proceeded to administer chloroform, and Dr. B. introduced his hand and attempted to gain the feet, but was prevented by the uterine pressure. I then introduced my hand, and found a marked

contraction of the antero-posterior diameter, caused by a projection of the promontory of the sacrum. Passing my hand, with some difficulty, through the ring caused by the contraction of the circular fibres of the uterus, I reached the feet, brought them down, and speedily delivered the child, which gasped several times, but all attempts to restore it were unavailing. This woman was delivered of a dead child by forceps in Germany, and Dr. B. had previously delivered her, by turning for arm presentation, of a dead child. The patient did well.

March 26.—Mrs. J. M., 136 Mulberry Street, with her fourth child (two of them stillborn). She had been taken ill on the evening of the 24th, and was without a physician till this A. M. She was then seen by Dr. Hale, of Broome Street, who found that the membranes had been some time ruptured, and the hand presenting. He sent for Dr. Johnson, of the New York Lying-in Asylum, who called for me at 12 M.; found the os fully dilated, the right hand and cord presenting and descended into the vagina, the head in the left iliac region. We proceeded to administer chloroform, and placing her in position; I introduced the left hand, and seizing one foot (after in vain attempting to return the prolapsed cord, as it was easy to return the hand and arm, and bring down the head), with some difficulty, turned and delivered a male child. All efforts to produce respiration were fruitless, although the heart beat for some time quite vigorously. The afterbirth was delivered by a second introduction of the hand, the flooding being quite severe. In this case, there was a most decided contraction of the antero-posterior diameter to from three and a half to four inches, resulting from the projection of the promontory of the sacrum. Mother did well.

CASE V.—Case of Placenta Prævia.—February 11, I was called to Mrs. G., 178 Lawrence Street, with her tenth child at the seventh month. She had been taken with very copious flooding almost producing syncope. Examination, per vagina, showed nothing. The os was entirely out of reach, and no portion presenting could be felt through the parietes, so as to be diagnostic. I administered tinct. scellæ cornut. This controlled in some degree the hemorrhage but produced no forcible contractions, and she went on in the same manner, with a slight but constant flow for six days, constantly taking of the above recipe a drachm from every half hour to every four hours, as occasion required.

February 17, 5 A. M., I was sent for on account of somewhat increased hemorrhage and pains, and in half an hour a female fœtus was delivered entirely enveloped in the membranes, merely punctured, but unruptured, the occiput being immediately under the presenting placenta. No subsequent flooding or untoward accident occurred, and on the third or fourth day the woman was up about the room. The specimen was shown by me to Professor Alonzo Clark's class at the College of Physicians and Surgeons of this city.

I wish to say, in this place, that, without the aid of chloroform, I think it would have been almost impossible to have effected many of these operations. In no case is it of so much importance as in one of neglected arm presentation, or any case where turning is necessary, and the uterine contractions vigorous.

NEW YORK, 153 Wooster Street,

March 25, 1852.

ART. XIII.—*Case of Resection of the Superior Maxillary and Malar Bones.*

By DANIEL BRAINARD, M. D., Prof. of Surgery, etc.

I WAS consulted, October 17, 1851, by Caleb Inman, a highly respectable citizen of Wisconsin, residing near Beloit, about a tumour of the left upper jaw. It projected in front below the eye, where there was an ulcerated surface; downward into the mouth, where there was an opening discharging pus and serum; it encroached upon the mastoid, from which there was a discharge of mucus, and projected outwardly beneath the zygomatic arch.

It commenced about eight months previously with a discharge from the nostril. Soon after a tumour appeared beneath the eye, which ulcerated or was opened; it next encroached upon the mouth, and when the teeth fell out, a discharge from the antrum took place. Its growth has been rapid, and attended by much pain.

The patient was sixty years of age, and his health was somewhat impaired.

The treatment had consisted of applications of nit. silver to the ulcerated surface, injections of a solution of it into the antrum, and the iodide of potassium, in solution, given by the mouth.

The operation for its removal was performed October 18, 1851, in presence of Drs. Rutter, M. Arthur, and several other physicians and students.

The tumour was uncovered by an incision extending from the nose to the zygomatic arch, and another from it to the angle of the mouth, and dissecting up the flaps. The palate portions of the superior maxillary and palate bones were divided by a metacarpal saw, carried into the nostril; the nasal process of the superior maxilla, the connection of the frontal and malar bones, and the zygoma were separated by the bone scissors. This loosened the mass, which was so much softened that its removal was completed by the knife.

The hemorrhage was copious, and required ligatures to be placed upon numerous enlarged branches of arteries.

It is scarcely necessary to add that there was great depression resulting from the operation.

The wound having been filled with balls of lint, stitches were applied to the flaps, and the patient put under the influence of opium in full dose.

In aged and debilitated patients always, and in others much depressed by formidable operations, I am in the habit of giving immediately and continuing not only soups and farinaceous drinks, but saline food and stimulants. Chicken broth, which contains two per cent. of animal matter to ninety-eight of water, is insufficient; good porter or brandy and meat are necessary.

Under the use of this treatment my patient convalesced without a bad

symptom, and in twenty days was able to return home. I have received a line from him, dated April 3, 1852, which states that his health is good.

On examining the tumour it seemed to be composed of a congeries of mucous follicles resembling the tonsils, the bony structure being entirely destroyed. It presented no trace of cancerous tissue, and no cancer-cells were detected by the microscope.

CHICAGO, April 27, 1852.

REVIEWS.

ART. XIV.—*The Principles of Surgery.* By JAMES MILLER, F. R. S. E., F. R. C. S. E., &c. &c. Third American from the second and enlarged Edinburgh edition, illustrated by two hundred and forty engravings on wood. Revised, with additions, by F. W. SARGENT, M. D., member of the College of Physicians of Philadelphia, &c. Philadelphia, Blanchard & Lea, 1852: 8vo. pp. 751.

WE believe that no single volume on the principles of surgery ever found greater favour with the profession than did the first edition of Prof. Miller's book. Its style was attractive, and it evidenced a desire on the part of its author to win more attention to the *science* of surgery than was commonly bestowed; while it successfully demonstrated that the great body of facts which had been constantly accumulating in the course of the *practice* of the *art* could be harmonized and classified under definite laws, with as much propriety and advantage as the corresponding materials of any other department of human knowledge. It cannot be denied that the petty details of mechanical surgery, the multiplying and modifying of operations, particularly, have engrossed a disproportionate share of the attention, and obtained a higher place in the estimation of surgeons than they deserve, as compared with the investigation of the pathological laws which regulate the origin and progress of surgical diseases, and the vital reparative actions upon which the success of the simplest operative proceedings must depend. We do not say that surgery as a science has been materially injured by this division of labour, further than has accrued in consequence of the erroneous impressions formed as to the comparative importance of the principles and the art. For, it is necessary to collect facts before laws can be framed; and it *generally* happens that those who are the most attentive to the details, and most fond of the minutiae of practice, are the least qualified to group these particulars according to their analogies, and to deduce the legitimate scientific conclusions from them. Hence the multiplicity of crude and unfounded *laws*, so called, in medicine and surgery.

Professor Miller, however, has not only the opportunities and the powers of observation necessary to the proper collection of facts, but the higher qualifications which enable him to combine and arrange them; and, consequently, he has presented us, in the volume now under review, with a most admirable digest of the principles of surgery. By describing pretty fully the peculiarities of the several pathological processes as they manifest themselves in the different tissues, he has contrived also to introduce as much of practical surgery as could be expected in a volume limited in size and confessedly devoted to the theory. Many important subjects, on the other hand, are not noticed, as wounds of the cavities, hernia, stone in the bladder, diseases of the eye, &c.; but these do not require any mode of treatment so special to themselves, excepting in the peculiarity of operative proceedings, as to need separate mention. We will endeavour, by quotations and by comments, to present a fair exposition of the character and merits of the volume.

After a comprehensive, though very general, outline of the history of sur-

gery, originally contributed by Mr. Miller to the *Encyclopædia Britannica*, the proper subject of the volume is commenced by an account of the "Constitutional Affections in Surgery," including fevers, cachectic affections, and affections of the nervous system; and the modes in which affections of internal organs occur as complications with surgical disease are described.

The author treats of *Serofula* and *Tubercular Disease* as one, while he virtually admits that, to a certain extent, at least, some distinction exists between them. He says:—

"The frequent association of serofula with a peculiar form of morbid product has long been observed. This deposit, which will presently be described under the name of *tubercle*, occurs very frequently in enlarged lymphatic glands, leading to a slow process of suppuration and ulceration there. It may also affect various internal organs, as the lungs, brain, intestinal and mesenteric glands; in which situations it proves the source of various destructive diseases. We cannot, however, limit the term serofula, as some have done, to disorders arising from tubercular deposit; inasmuch as most affections of the skin, mucous membranes, and joints, in serofulous individuals, have no such origin. Nor, on the other hand, can it be admitted that tuberculization of the internal organs, at least in adult life, is always, or even generally, a disease of the serofulous habit. All that can be fairly said is, that tubercular disease of the external glands is a frequent concomitant of serofula; as is also a similar affection of the mesenteric glands. And that, in a certain indeterminate number of instances, tuberculization of internal organs follows, or accompanies, the characteristic evidences of serofulous disease; while, in others, it is quite an independent affection. Still, however, as most of the forms of tubercular disease which come under the notice of the *surgeon* are distinctly serofulous, it is requisite to treat of these affections under one head."—p. 63.

This is, perhaps, the best manner of treating the subject, instead of attempting to prove at length the identity or the distinctiveness of the two; for after all that has been written on this *reæta quæstio*, the decision seems to be as remote as ever. Indeed, until pathologists can be induced to agree to consider as *tuberculosis*, that complex diseased condition only of which the product which we call *tubercle* is present as the anatomical representative, we know not how the unity or diversity of the two cachexiæ can be determined; for until some such starting-point be adopted, fixed and clearly defined in its characters, there must continue to be disputes about terms. It would certainly be much more in accordance with the principles which govern us in the diagnosis of other affections, to associate with the symptoms of tubercular disease an anatomical lesion which is found to be constant, if such an one can be shown to exist. With the exanthemata, we have an eruption peculiar to each; with typhoid fever, an especial lesion of the follicles of the mucous membrane of the small intestines, &c.; with carcinoma, a distinctive anatomical structure. And however strong may be our conviction, from the symptoms, that we have such or such a disease to deal with, if the peculiar physical appearance be wanting during life, or if we do not find after death the lesion which we commonly associate with the disease, we are compelled to admit that a doubt exists as to the correctness of our diagnosis.

We believe that much of the confusion and conflict of opinion, upon the question of the identity of serofula and tuberculosis, arises from the vagueness of our ideas as to what really is serofula, and from certain assumptions concerning the morbid product which we ordinarily ascribe to it. The term *serofula* was originally employed to designate the swellings which were observed in the necks of pigs, and, by extension from them, of human beings (see Phillips on Serofula, chap. i.); and even to this day these same enlargements of the superficial lymphatic glands are considered as most pathognomonic of

this disease, which is also made the reputed parent of many other chronic and very obstinate local affections, of almost all such, in fact, which cannot positively be ascribed to some other source. And now, since it has been clearly ascertained that the usual termination of these enlarged glands is in suppuration and ulceration, that the morbid deposit thrown off from them is identical with the tuberculous, is, indeed, *tubercle*, (*vid.* Lebert, "*Des Maladies Scrofuleuses et Tuberculeuses*,") and that the ulcers left resemble those which are of undoubted *tubercular* origin; it is immediately inferred, and with apparent propriety, that scrofulosis and tuberculosis are one and the same.

Now, we ask, would it not be wiser, more in accordance with the spirit of exactitude which is gradually working its way into medical reasoning, to consider, with Lebert, as *tuberculosis* that form of constitutional disease which only and always produces *tubercle*, whether it exhibits itself in the superficial or visceral lymphatic glands, or in internal organs; and to group under the head of *scrofula* those other chronic inflammatory or non-inflammatory engorgements of the lymphatic bodies, the local, subacute, or chronic inflammations implicating chiefly the skin and subcutaneous areolar tissue, the eyes and ears, the articulations and the bones, and which, equally without any peculiar morbid deposition, manifest a tendency to ulcerate and suppurate; or else to reject altogether the term *scrofula*, which conveys such different impressions to different minds, and means nothing very definite, and to regard, with Mr. Phillips (*op. cit.* Am. ed., p. 31)—

"Those diseases called scrofulous, but in which no scrofulous matter is present, as not scrofulous at all, but simply the result of such low inflammatory action as is often set up in a debilitated state of the constitution?"

(It must be borne in mind that, in speaking of "*scrofulous matter*," Mr. Phillips refers to that found in the superficial lymphatic glands, which is really *tubercle*.)

We think it must be admitted that, in many cases of inflammation occurring in persons of the so-called scrofulous diathesis, a deposit takes place in the inflamed part, which is neither *tubercle* nor analogous to the product of healthy inflammation; not yet does it possess physical and chemical properties so peculiar and constant as to be deservedly termed scrofulous matter, *par excellence*. This deposit is very frequently removed by absorption, without exciting inflammation and suppuration, from the external lymphatic glands, and probably also from the lungs (*vid.* a paper by Dr. Pepper, "on Scrofulous Inflammation of the Lungs," *Am. Journ. Med. Sci.*, April, 1852).

But, to return to Professor Miller. After pointing out the peculiarities of the scrofulous cachexia, and the general and local effects induced by it, he describes the physical and chemical qualities of *tubercle*, and illustrates the former by some very excellent drawings copied from Dr. Bennett's contributions to this subject. He has omitted, however, to trace the changes which occur in the tubercular deposit; but this has been done fully in a note by the editor. The special pathology of *scrofula* and *tubercle* is detailed in the second part of the volume, where the diseases of particular tissues are described.

We pass to the chapter on *Inflammation*. This important and complex process is very fully explained; it occupies nearly one hundred pages. The author has evidently studied this subject with very great care, by clinical and experimental aids, as well as by reference to the best authorities. Indeed, he has accomplished this portion of his task so well, that he has scarcely exposed himself to criticism, excepting in some few and comparatively trivial points.

We may observe that he does not pursue to any length the purely speculative portion of the theory of inflammation. And, in questions of this kind, whenever he is compelled to express an opinion, it is generally in favour of moderate views. Thus, in the section upon the *theory of inflammation*, p. 116, he says:—

“It has often been disputed whether inflammation is caused by increase or diminution of vital strength in the part—an excitement or a debility; and both extremes have been tenaciously held and argued. According to the preceding account, the fact may be said to lie nearly midway between the disputants; the action being found to commence with excitement, and probably with an exaltation of the part's vitality; this, however, proving usually of short duration, and succeeded by growing debility and much ultimate prostration. True inflammation having been established, vital *power* is sunk very low. And what is worse, from this overthrow the part, once truly inflamed, never wholly recovers, but ever remains more prone to action, and less able to control it; a fact, which it is of much importance that both patient and practitioner should bear in remembrance.”

It is very difficult to avoid using forms of expression which have long been employed in medical writings and discussions, even though we may no longer use them in their original sense. Thus it is with the terms *action*, *action of vessels*, &c. The former occurs, as the reader will have noticed, in the above quotation, and elsewhere; yet Mr. Miller does not seem to lay any great stress upon the state of the bloodvessels in and about the inflamed part; regarding them, as do all enlightened pathologists, merely as carriers of the blood, and looking upon the process of inflammation as a modification of that of nutrition; and hence, seeking for the explanation of its phenomena primarily in some disturbance of the normal relations and reactions between the tissues and the blood, rather than in any alteration in the condition of the vessels, or in the motion of the blood itself.

The period of transition from the healthy condition to the actual establishment of inflammation, is divided by the author into three stages: 1. *Simple vascular excitement*; 2, *active congestion*; 3, *true inflammation*. This division would have been more accurate, as well as more comprehensive, as it seems to us, if the instrumentality of the *nervous* system in the causation and phenomena of the process at its very outset, had been as prominently and distinctly acknowledged as the vascular. We would have the first proposition to read *simple nervous and vascular excitement*; and, indeed, throughout the whole process the same nervous agency should be allowed to play an important part. For, although in plants local vascular turgescence and increased nutrition are often excited by local irritation, as is exemplified in the production of the galls; and, although in animals inflammation is not unfrequently induced in parts paralyzed—proving thereby that the existence and integrity of the nervous system is not *essential* to these processes—there are yet abundant facts to show that where there is a nervous system, and especially where it is most highly developed, it does *exert an influence* upon normal as well as morbid nutrition. What the nature of this influence is—whether it displays itself in the reaction which the molecules of the tissues exercise upon the blood-plasma, or whether it is primarily wrought upon the bloodvessels—we are not yet able to determine.

And there is another point of view from which the importance of the nervous element in the process of inflammation may be contemplated. The nervous system constitutes, undoubtedly, the *protective* element of the animal organism. By means of it animals are placed in relationship with the exterior world; by it they are informed of the existence of things necessary to their

being, and are enabled to possess themselves of these; and by it they are made aware of dangers which threaten them, and also have the means of avoiding or overcoming them. By it, too, they are made acquainted with their own interior condition—their necessities and the derangements to which they are continually subject. To suppose that a piece of mechanism so wonderful in the perfection of its structural arrangements as the animal organism—as man, for example—would not be furnished with powers adequate, within a considerable extent, at least, to the protection of itself against the effects of disease, and to the reparation of structural injury, would be to sink the power and wisdom of the Creator below the level of the same attributes as displayed by man in the construction of much of his handiwork. Inflammation is oftentimes one of those preservative and protective agencies in the economy; it is one of the means by which the system or the part rids itself of various agents of mischief, introduced from without or generated within, and from which it could not otherwise free itself. In Surgery, examples are common; as when a foreign body is lodged in a tissue, and is ejected from it by supuration; when the course of mortification is arrested, and the dead part is thrown off; when a malignant or a non-malignant tumour is got rid of by sloughing. In the practice of Medicine, the same thing is witnessed in the elimination of tubercular and cancerous deposits; in protective pleurisy and peritonitis; and probably, also, in the rejection of subtle *materies morbi* by the exanthematous fevers. Now in these and similar cases of what may be called protective or eliminative inflammation, it must be the nervous element of the part implicated which warns of danger or injury, and is primarily the active agent in the protective or reparative process. We think, therefore, that this element has been too much overlooked by Professor Miller in his exposition of the theory of inflammation.

With regard to the second stage of the morbid process in question, *active congestion*, we agree with the editor in the opinion that it is made to embrace many of the phenomena of actual inflammation; indeed, the symptoms which the author ascribes to it are many of them such as properly belong to the early and middle stages of true inflammation, as usually described. He says, p. 111:—

“The circulation loses its acquired rapidity, and becomes slower even than in health. The red corpuscles are no longer limited to the central current, but encroach more and more on the lateral and clear ‘lymph spaces.’ The colourless, or ‘lymph globules,’ are increased in number; and by becoming unusually adhesive to each other and to the walls of the vessels, are supposed to act obstructively—contributing to the slowness of movement in the blood. Exudation is more copious than in the previous stage, and of a different kind. It consists chiefly of liquor sanguinis; and this is altered from the healthy standard. The fibrin is increased, not only in quantity, but also in plasticity, or tendency to become organized.”

Consequently, he is obliged to advance considerably towards an actual loss of vitality in the part before it can have attained the stage of inflammation proper, which he says is—

“Denoted by more or less extravasation and destruction of texture, and the formation of pus in progress. Thus, true inflammation, structurally considered, consists of suppuration, actual or imminent, surrounded by fibrinous deposit, and that encircled by effusion of serum.”—p. 116.

Upon this point the editor observes:—

“In many organs, as in the lungs, the heart, the serous and synovial membranes, undoubted and violent inflammation often exists without the formation

of pus at all; and even upon the exterior, suppuration is not always consequent upon true inflammation, at least as this process is usually understood."—*Note to p. 116.*

The symptoms of inflammation; its local and general effects; its duration and character; the circumstances which affect it in both of these particulars; and its terminations in *resolution*, in *excessive deposits* of various kinds, in *suppuration*, in *ulceration* and *sloughing*, are fully and satisfactorily described. And we can assure our readers, that the views unfolded by the author upon these important points, are in accordance with those which are considered as most judicious and enlightened. The chapter, also, on the *treatment* of inflammation furnishes a complete exposition of all that scientific research and clinical experience have agreed upon as most conducive to the successful management of the disease.

Then follow successive chapters on the *Healing Process*, and the different modes in which it is effected; on *Acute and Chronic Abscesses*, and their varieties, purulent infiltration, secondary abscess, pyæmia, &c. &c.; on the numerous kinds of *Ulcers*; on *Mortification*; *Hypertrophy*, *Atrophy*, and *Absorption*. These chapters are not meagre delineations of principles alone, but they are exceedingly rich both in the results of scientific investigations and in practical teachings; in the latter particular they go much more into details than do most of the books which are devoted exclusively to the *practice* of surgery.

The chapter eighth, on *Tumours*, is worthy of great praise, and we shall best exhibit its excellencies by making a few extracts from it.

At p. 284, of the Origin of Tumours, the author says:—

"Tumour is always the result of perverted growth and nutrition: and its origin, in particular cases, must be owing to some predisposition either of the part or of the system. The latter, indeed, is frequently shown very plainly by a tendency to the generation of numerous growths of the same kind in one individual. Now, any cause which, in a person so predisposed, leads to an interruption, even temporarily, of the normal function of growth in a part, must necessarily lay the part open to the action of the predisposing causes of tumour. Such a perversion of the normal process occurs, when a blow or other injury leads to extravasation and inflammatory exudation. Under ordinary circumstances, this exudation merely accomplishes the wonted salutary end in view; namely, restoration of the continuity of texture, which the extravasation had broken up; and, on this end having been attained, redundancy of exudation disappears by absorption, and the normal condition of texture is more or less completely restored. But, not infrequently, the absorption is incomplete; a redundancy of fibrinous plasma, in process of organization, remains; formative action of the bloodvessels continues in an exaggerated, though simple form, in the seat of exudation; the plasma is added to, while the surrounding textures are undergoing merely the quiet and healthful changes of ordinary nutrition; the swelling increases; and its growth is now distinct and independent of the surrounding parts. This we believe to be the most frequent mode in which the simple tumour originates: not from the organization of extravasated blood; and not as a direct result of, or attendant on the ordinary inflammatory process; but this and the extravasation being rather related to it as the exciting cause. The blow and the extravasation are followed by fibrinous exudation, the result of an exaggerated nutrition effected by the inflammatory process, with a restorative and salutary object in view; the exudation is redundant, and the excess is not wholly absorbed; continuance of deviation from the normal structure induces a continuance of exaggerated nutrition at that part: accumulation of organizable plasma results; and commencement of a new growth is established. If the morbid local increase of deposit be of a simple fibrinous and plastic character, a simple tumour results; but if, from constitutional vice, or other causes, it has departed from the ordinary fibrinous character, then the resulting tumour equally deviates from similarity to the original texture."

The histology of the *simple homologous* tumours, is analogous to that of the normal tissues of the same kind, and their mode of growth presents scarcely more difficulties to the student than the development and growth of the natural structures of the body; for their elements are similar and their nutrition is effected in the same manner. But the reason why a particular form of tumour springs up from one part, and another from another part, or why the modification of nutrition should assume the character of tumour at all, will perhaps always be a mystery. Much greater difficulty occurs in the case of the *heteromorphous* growths, the peculiar elements of which have no analogues in the normal structures. Merely to refer them to *special constitutional vices*, rather multiplies than lessens the difficulty, because the origin of the parent dyscrasy is equally an enigma. Mr. Simon well observes (*Lectures on Pathology*, p. 152): "The evolution of a cancerous tumour in the body marks, I apprehend, a new state of things in respect of the patient's total organization and vitality; just as much as the first acting of the kidneys in the embryo, and of the lungs in the infant, respectively mark new eras in the animal's progressive development." And one cannot but agree with him in believing that, in order to gain the clue to this labyrinth, we must first acquire accurate knowledge of the chemical alterations which the blood has undergone at the outset of the cancerous disease, by comparison of the total chemistry of the cancerous body—blood, tumour, excretions—with the total chemistry of the healthy body.

Professor Miller adopts, as the most practical and useful classification of tumours, that which is based upon their malignancy or benignity. But he admits that these two great classes pass into each other by very insensible and scarcely describable gradations. With respect to the *degeneration* of benignant tumours, he contends that this event does happen, and not unfrequently. He says:—

"Degeneration may proceed from one of two causes; general or local. While a tumour is yet simple, the constitution may undergo an untoward change, cachexy becoming established; and the tumour will then gradually sustain a corresponding alteration. In this manner, a tumour of the breast, originally of a non-malignant nature, often insensibly passes from the simple to the carcinomatous structure and tendency; the signs of degeneracy in the system preceding those of the evil change in the part. Or, on the other hand, the system yet remaining apparently unchanged, the tumour itself degenerates, in consequence of repeated local excitement; as by blow, puncture, or stimulant malap Praxis."

And, again, after speaking of the effect of acute inflammatory action upon the condition of the tumour, he says:—

"The more chronic and minor action is less marked in its operation, but equally decided and often more untoward in its effect. At first, it may cause mere acceleration of the growth, by increase of the same deposit as before; the tumour enlarges, but is yet of its original simplicity of structure. But, after a time, the deposit changes; the action is altered, too; and the nutrition is not merely exalted, but perverted," &c.—pp. 288-9.

Degeneracy from the first cause, the inter-occurrence of constitutional cachexy of the cancerous character, we cannot but admit; for if this dyscrasy may occur in an individual whose nutrition has to all appearances been normal in kind and degree, much more may it not supervene in one whose nutritive processes have already manifested a disposition to, nay an actual, aberration? and the product of this degeneration will be a heterologous deposit. But that a tumour originally simple in its character, can by mere local irritation, without the prior induction of the constitutional cachexia, become malign-

nant, we are not prepared to believe; this doctrine removes from the class of cancerous tumours the property upon which their distinctiveness is mainly based; namely, their dependence upon a peculiar alteration of the constitution for their production, which Professor Miller himself admits.

After discussing various other matters connected with their general pathology, the author proceeds with the consideration of special tumours. Those which are particularly described are the *simple tumour*, or simple sarcoma; fibro-plastic tumours; the true *fibrous*; the *fibro-cellular*; the *fatty*; the *cystic*; the *cartilaginous*; the *calcareous*; the *scrofulous*, and the varieties of the *malignant tumours*; the *vascular* and the *osseous* are described in connection with diseases of the vascular system, and the bones respectively. The tumours of each class receive careful attention, in every important particular; and beautifully executed drawings illustrating their appearance *in situ*, as well as in section under the microscope, accompany the explanations of the text. The account given of them embraces the sum of what has been unfolded by the investigations of the ablest pathological inquirers in Great Britain and on the continent, down to the time of the publication of the volume.

From the judicious remarks of Professor Miller concerning the treatment of tumours, we will quote what he says with reference to exploratory puncture, where doubt exists as to the character of a case under examination.

“Such exploration is by no means so light a matter as some would seem to consider it. It is not warrantable to plunge a trocar into every and any tumour, of whose nature there may be some doubt. If it be an abscess, no harm ensues; the puncture is immediately enlarged for the purpose of due evacuation. If it prove to be a solid growth, there may still be no harm; provided patient and surgeon are prepared at once, or at all events, within a day or two, to proceed to extirpation. But much injury will not fail to result, if, after puncture, the tumour be left to itself for some considerable time; and, more especially, if absurd attempts be made by stimulation to effect its removal by absorption. There is no more sure exciting cause of a tumour's degeneration, than the thrust of an exploratory trocar. On a section being made of the mass, after removal, the origin of the doubly depraved structure may not unfrequently be seen in the instrument's track. While, therefore, exploration is expedient, to guard against errors of diagnosis which might otherwise occur, and which might lead to serious error in practice, its use ought to be limited to very doubtful cases, in which other means of diagnosis, patiently and skilfully used, have failed to satisfy; and not even in such cases should it be had recourse to, unless early operation, if not immediate, have been determined on, in the event of the swelling being proved to be an undoubted and indiscussible tumour.”—p. 328.

The succeeding chapter, on *Hæmorrhage*, embraces a very good account of all the varieties of this accident; the predisposing and exciting causes upon which each depends, their effects upon the system, and the natural and artificial hemostatic agents. Many of the accompanying drawings are new and very expressive.

With this chapter closes the first section of the volume, devoted, as we have seen it to be, to an account of the general or constitutional surgical affections. The second section describes the diseases of *Particular Tissues*, and their treatment.

Among the diseases of the *Integument* are enumerated erythema, erysipelas in its numerous phases, hospital gangrene, furunculus, carbuncle, diffuse inflammation of the areolar tissue, entozoa and tumours of the integument.

In the treatment of *Erysipelas*, of the simple variety, which “is from the first acute, and obviously progressive, local bloodletting is advisable,” the author says. He objects to leeches, as being apt to stimulate the surface by

their bites and suction; he prefers *punctures*, rapidly made with the point of a lancet.

"This practice," he continues, "may startle those who are practically unacquainted with it, by its apparent severity. But the severity is only ideal. We grant that, in one point, the infliction of temporary pain, it may be more severe than leeching; but in every other it is much and truly superior. Alarming it may be to the timid patient; but it is quickly over. A few seconds suffice; and the relief is both satisfactory and instant. In the more severe cases, which demand its use, the pain of infliction is often the least. The acute pain, already existing in the part, masks that of the punctures; in the same way as the operation of scarifying tense and painful gums seems, not unfrequently, to be agreeable rather than otherwise to the teething child. And, as already stated, the ultimate cicatrix of each puncture is so trifling, as to render the practice equally applicable to the face, when erysipelatous, as to any other part of the surface."—p. 369.

After a careful and minute description of each variety of the disease, he gives the following general characters of erysipelas, p. 377:—

"Tendency to spread; tendency to change its site by metastasis; tendency to prevail in an epidemic form; deficiency of concomitant fibrinous and plastic exudation; rapid attainment of the suppurative crisis. The pus, as if imperfectly concocted, thin, and non-laudable; by its diffusion, danger to texture great. In the constitutional symptoms, the inflammatory type seldom predominant; tendency to the asthenic character usually strong, often even from the first; gastric and biliary disorder, with general derangement of secretion, primary and great. Active local treatment not advisable, when texture is not in danger; but when diffused suppuration is threatened or established, free incision alone remedial. Active constitutional antiphlogistics in few cases well borne; unnecessary, except in the most sthenic and intense examples; and, even then, to be employed with much prudence and moderation. In the majority of cases, and comparatively early in all, constitutional support, on the contrary, demanded. In short, an asthenia, or tendency thereto, reigns throughout. And by some this is accounted for, by supposing a poisonous influence to be exerted on the system; either generated within, during or by the inflammatory process; or conveyed from without, by atmospheric influence, or by direct contagion."

The chapter on the affections of the *Serous* and *Mucous Membranes* includes *inflammation* of both, and *Polypi*.

The next subjects treated of are affections of the *Periosteum* and *Bone*, in a lengthy chapter of seventy pages, embellished by very many excellent drawings. That portion of it which is occupied with the consideration of *inflammation* of bone, and its various results in *change of structure*; in the *formation of pus* upon the surface, or in the interior, either diffused or limited, acute or chronic, simple or scrofulous; in *ulceration*, simple or carious; and in *necrosis*, will amply repay a careful study. The different forms of *morbid growths*, occurring in and upon the bones, receive also their full share of consideration, not only as to their pathological nature, but likewise with reference to their diagnosis and treatment.

As an instance of the author's constant endeavour to apply sound principles to the treatment of local diseases, we present the following extract from his remarks on the treatment of periostitis. The suggestion bears upon a condition which is by no means uncommon, and which it is very important to relieve:—

"Sometimes action seems to be partially arrested, yet does not decline; a tense and painful swelling remains unabated; and, on the contrary, tending still to increase. It is plain that relief of tension would be a most important

indication under such circumstances. For a similar state of matters, unconnected with bone, we would freely practice incision; tension would be at once relieved, and action would speedily decline; the wound would suppurate, and its margins would perhaps slough, but granulation and closure would speedily follow. Here, however, similar procedure would be rash and untoward. Tension would doubtless be relieved: but with suppuration, which is inevitable, would certainly come either ulceration or death of the bone; the very results which we seek to avoid. Direct incision, therefore, is plainly unwarrantable. But, by inserting a fine bistoury, or tenotomy needle, at a little distance from the tense part; passing it over, cautiously, beneath the integument, then turning and pressing its edge so as to divide the tense membrane wholly to the desired extent; cautiously withdrawing the instrument, so as to make a valvular, oblique, and subintegumental wound; and, finally, closing the single integumental puncture immediately, with isinglass-plaster, or collodion—in fact, by completing the wound so as effectually to prevent introduction of atmospheric influence, and thereby obviating the chief risk of suppuration—we may obtain diffusion of the swelling, relieve tension, and so facilitate both resolution of the action and discussion of its results. This manœuvre, however, requires skill and caution in its performance; and even with these, is not wholly devoid of risk. It is, therefore, not to be indiscriminately employed, but should be reserved for those cases which otherwise prove obstinate, and in which aggravation and suppuration seem imminent.”—p. 397.

Next in order follows an excellent chapter on *Diseases of the Joints*. It is based on the most recent and most accurate investigations upon the normal and pathological anatomy of the tissues concerned; and is illustrated, as are all the chapters in the book, with admirable drawings. We know of no formal treatise in which so good a history is given of the changes of structure which disease induces in the articular cartilages. The paper of Dr. Redfern, of Aberdeen, is used as the starting-point, and much light has been shed thereby on the subject. The examinations made by Dr. Redfern have confirmed the account given by Mr. Goodsir, as to the process of cell-modifications in diseased cartilage, and the multiplication of nuclei; and, likewise, as to the formation of a false membrane at those points where the cartilage has been removed, and even between the cartilage and the subjacent bony surface. This false membrane becomes vascular by extension of vessels from the bone and synovial membrane; and hence, probably, has resulted the belief that the cartilage itself becomes pervaded by vessels, in inflammation. Dr. Redfern has also devoted much attention to the alterations which the intercellular substance of the cartilage undergoes. He describes this as being in the normal state homogeneous and structureless; but in the process of disease it becomes—

“Split up into bands and fibres; these are often formed in partially and slightly diseased joints, giving a soft and velvety aspect to the surface of the cartilage.”—p. 478.

It will be remembered, doubtless, that Dr. Leidy described, in the *American Journal*, April 1849, the intercellular hyaline substance of cartilage as exhibiting a minutely fibrous structure in the normal state, and the cells as subject to increase by division. Thus, as Professor Miller remarks, the analogy between the normal and morbid phenomena is apparent. Dr. Leidy has repeatedly confirmed his original observations, so that the matter is no longer to be doubted. We have here, consequently, a beautiful illustration of the knowledge derivable with reference to pathological processes, from the intimate research into the normal.

There are numerous sections of this chapter, from which we might advantageously quote the author's observations; but we must restrict ourselves in

this respect. We will select some passages from his remarks upon *Loose Bodies in Joints*. Of their mode of formation, he says:—

"It is probable that in various ways these substances may be produced. 1. By external growth. A fibrinous deposit takes place exterior to the synovial membrane; and, as it enlarges, that membrane is pushed before, forming a close envelop. The little mass projects into the cavity of the joint, and is not unlikely to assume a pedunculated character. On a sudden movement, the peduncle may be severed; and the extraneous substance is thrown loose into the joint. 2. By internal formation, in the substance of the synovial membrane. A fibrinous mass may form in that tissue, analogous to the adventitious structures found in the 'fimbriated' condition of the synovial apparatus, formerly described (p. 473); but differing from such formations in being single, instead of gregarious; and ultimately becoming much more dense in structure. It is not difficult to imagine how such a formation, at first attached, may become separate, and float loosely within the cavity. 3. By epithelial growth within the joint's cavity; epithelial cells accumulating there, cohering, and growing by abstraction of nutritive material from the synovial fluid. 4. By hypertrophy of original cartilage. Joints, especially those of the elbow and knee, are not unfrequently found in museums, with marked and irregular enlargement of their cartilage, and also of the subjacent bone, at the outer rim of the cartilaginous surface. Part of these excrescences may point towards the joint, showing more or less of the pedunculated form; and portions may be found within the joint, some quite loose, and others yet adherent. Such preparations sufficiently indicate the abnormal process whereby this mode of formation may be effected. It should also be observed, however, that such hypertrophy is not mere enlargement of the original cartilage. The texture is changed, becoming infinitely more dense and fibrous; and it is a portion of this altered tissue which is projected and detached."—pp. 495, 496.

And we will also transcribe the *résumé* of the author's description of the operation which he advises for the removal of the body; partly on account of the excellence of the operation, and partly to convince those of our more *practical* readers, who may think that a book on the *Principles of Surgery* is not adapted to their tastes, that science nowhere exhibits itself to greater advantage than when applied to the *art* of surgery.

"The operation, as we would advise it, is thus seen to consist of distinct parts. 1. The prophylactic preparation, occupying not less than several days. 2. The oblique valvular puncture; carefully avoiding the entrance of atmospheric air even into the superficial areolar tissue. 3. Extrusion of the loose body into the areolar tissue, in a different route from that of the puncture; and lodgment of it, subcutaneously, at a safe distance from the synovial wound. The second and third parts of the procedure are accomplished at once, in immediate succession; and then two or three days, not more, are allowed to elapse, with a view to consolidation of the wounds. 4. By a direct incision, the offending substance is finally removed from its temporary abode. It is not at once taken away through the original puncture, because it would be in most cases very difficult to accomplish this without the admission of atmospheric influence; the almost certain consequence of which would be synovial inflammation of an intense kind, ending in suppuration and loss of the joint. And, as experience has proved, it were alike unsafe to leave it unremoved from its secondary and subcutaneous abode; it being extremely probable that an effort would be made by nature to dislodge it thence, by the ordinary means of inflammation and suppuration of the textures around. And then we should, probably, be unable to prevent involvement of the synovial membrane."—pp. 497, 498.

Several other modes of relief are also described. After enumerating and defining the various forms of Anchylosis, the author states, in speaking of the treatment, p. 504:—

"In all cases, ankylosis should be warily interfered with. It is an imperfect cure; yet both a saving of the part, and a cessation of morbid action. And it may be regarded as a compromise between health and disease; the rash infringement of which is most likely to be visited by untoward consequences. The true form is plainly not to be broken up, either by gentle or by violent means. The latter have been made trial of, with a result truly deplorable. A certain M. Louvrier invented an apparatus, by the rude force of which, stiff joints were instantaneously straightened; and patients were submitted to the torture of this 'infernal machine.' A few escaped with comparative impunity, yet with little improvement in the part: in others, laceration, suppuration, gangrene, delirium, were the results; 'accidents frightfully severe, and ordinarily followed by death.' The only means of treatment to which true ankylosis is amenable, is that formerly noticed, by section exterior to the obliterated joint, and formation of a false joint thereby: an operation which has been successfully applied to the hip and knee-joints, but in regard to the expediency of which we desiderate a larger experience."

In connection with this paragraph, is a note by the editor, enumerating all the cases of ankylosis of the hip and knee-joints in which Dr. Barton's operation has been performed, *twelve* in number. In *one* instance only did the patient die, although *two* of them were certainly very unpromising subjects for the operation. Hence, it cannot but be regarded, for patients favourably circumstanced, as an admissible and hopeful operation, so far as experience informs us. But, as the editor remarks:—

"The operation is by no means free from danger. In fact, it establishes a sort of compound fracture of the femur, and is liable, as was exemplified by several of the cases quoted, though undoubtedly in a less degree, to all the hazards which attend this injury; hazards from long and profuse suppuration, phlebitis, &c. It is consequently a very important and most responsible position which the surgeon assumes in suggesting and recommending it to his patient," &c.

The fourteenth chapter is upon *Diseases of the Arteries*. Of course, by far the larger part of it is occupied in considering the pathology and treatment of *Aneurism*. The account given of this most important affection is exceedingly well conceived in all its parts, and is illustrated throughout by happily selected drawings. It embraces a minute exposition of the effects of ligature on arteries, derived mainly from the researches of Mr. Spence, a portion of which was published in 1843, in the *London and Edinburgh Monthly Journal*; the remainder has not yet been made public, but Professor Miller has had access to the whole, and has been courteously allowed by Mr. Spence to copy such of the drawings as he wished for the present treatise.

The observations of Mr. Spence have demonstrated the highly important and even essential character of the fibrinous exudation which takes place *external* to the canal of the artery, besides a similar effusion internally.

"He has shown clearly that the internal clot, so far from being, as was supposed by Mance and others, essential to the separation of the ligature without hemorrhage, is not unfrequently wanting, when the vessel has been successfully tied: the closure being entirely effected in these cases by the plastic exudation between the cut edges of the internal coats, and by the bulky fibrinous mass which forms within and around the sheath. It is this external exudation which, becoming vascularized, forms the medium whereby blood is supplied from all the surrounding parts to the important new formations within the external coat of the occluded vessel; and which, by its equable pressure upon the divided ends of the internal coats, prevents the tender adhesions within the sheath from being broken up, even when there is no coagulum. And hence arises an important practical caution; that it is not only advisable, in ligature of an artery, to avoid unnecessary separation of the vessel from its sheath, but

also that every undue interference with the soft parts around is also greatly to be deprecated. According to Mr. Spence, the vessels of the new plastic lymph are formed with great rapidity. In one instance, in the dog, he found them present, in considerable numbers, sixty hours after the operation. After a longer time, vessels begin to pass even into the clot, when this is present; these vessels being always in connection with those of the sheath and external lymph, and not proceeding, as has been supposed, from the interior of the artery."—pp. 537, 538.

Very particular attention is devoted by the author to the *treatment of aneurism*; all the numerous methods are described, and a very fair appreciation is given of their respective and comparative merits. And when so much opposition has been and still continues to be made, out of Dublin, and especially, perhaps, in Edinburgh, to the treatment by *pressure*, without incision, it is very gratifying to find that the latter city is so ably represented in favour of this plan, by Professor Miller. After a pretty full statement of the advantages of, and the objections against, this mode of treatment, he says, in conclusion:—

"That pressure is to supersede ligature altogether, in the treatment of aneurism, no one can imagine. Some patients, by idiosyncrasy, may be intolerant even of such modified pressure as is required; and to some aneurisms the application of it is impracticable. There seems every reason to anticipate that the result of experience will determine, that some aneurisms are unsuited either for deligation or pressure; absolutely incurable, by reason of extreme arterial degeneration. And that, of the curable cases, some are suited for deligation, others for pressure: just as, in stone, patients are not indiscriminately subjected to lithotomy, as in former years: but, while some are cut, others have the calculus removed by lithotripsy: neither operation being exclusively followed in the practice of any wise and thoroughly accomplished surgeon. And further, it will no doubt appear that there are certain cases of aneurism, in which it were both unwise and unwarrantable to operate by the knife, when experience has shown that pressure will suffice: just as we should be culpable in removing a stone by wound of the bladder, which experience tells us may be safely crushed, or removed by the urethra entire."—p. 549.

Affections of the *Veins*, and of the *Lymphatics*, are considered in the fifteenth and sixteenth chapters respectively; and in the seventeenth, affections of the *Nerves*, including neuritis, neuralgia, and tumours of nerves.

Neuroma is described as—

"A simple tumour, and, like the painful tubercle, of the nature of fibro-cartilage: consisting of dense plastic matter lodged amongst the fibrils of the nervous tissue, which are thereby separated, and usually rendered the seat of perverted sensation. Sometimes the formation occurs spontaneously; more frequently, it follows remotely on wounds, or other external injury," &c.

Several exquisite wood engravings exhibit the appearance and minute structure of these bodies.

The *painful subcutaneous tubercle* resembles *neuroma* in structure, according to the author; though Mr. Paget has always found them to consist of *fibrous* tissue, without cartilaginous admixture. (*Paget's Lectures on Tumours*.)

The eighteenth chapter treats of *Wounds* of all kinds, their peculiar characters, and the treatment best adapted to each variety. Mr. Miller herein exhibits himself as an accomplished practitioner, no less than one thoroughly versed in the principles of the science; and this chapter, taken in connection with the *third*, "on the healing process," forms a most admirable study on this most common of all the ills to which the surgeon has to minister. The most important complications associated with wounds, viz., *Hydrophobia* and *Tetanus*, are also fully described.

The remaining chapters of the volume, on burns and scalds; the effects of cold; fracture; dislocation; sprain, and rupture of muscle and tendon; bruise; and suspended animation, though very excellent in themselves, contain nothing which demands of us especial comment; to say that they are in harmony, so far as their value is concerned, with the rest of the book, is all that is necessary.

The volume concludes with a eulogy on *Chloroform*—"Him first, Him last, Him midmost." It was originally published as introductory to the author's course of lectures, in 1848. At that time, very few unfortunate results had followed its employment as an anæsthetic agent in surgery; now, however, such instances have become, unhappily, so numerous as to have induced a salutary caution with regard to its use, at least in this country; so that our readers will require no reminder from us to the effect that this "*Currus triumphalis*," not "*Antimonii*," but *Chloroformi*, should be ascended with some reserve, and driven with more anxiety.

We may be expected, according to the laws of formal criticism, to pass our opinion upon the literary merits of Professor Miller's book. It is a very favourable one. His style is animated and agreeable. We cannot say that it is invariably correct or elegant; the definite article is very commonly omitted where both of these attributes require its presence. And as "the lavish and indiscriminate introduction of *commas*" was animadverted upon in a recent number of one of our most valuable British contemporary medical journals, so may Professor Miller, we think, be justly amenable to the charge of lavishly and indiscriminately employing semicolons, where simple commas would have been more grammatically proper.

We must not conclude this notice without adverting to the taste and good judgment displayed by the editor in the performance of his task. He has equally avoided the error of overloading the text with unimportant annotations and of slighting his duties. His additions are all useful, and comprise whatever new facts have been contributed, or important views have been promulgated, since the publication of the original work. His principal contributions will be found in foot-notes in the chapters on Inflammation, Suppuration, Tubercles, Cancer, Tumours, Aneurisms, and Anchylosis.

Concerning "the getting up," if we may be allowed to use so mechanical a phrase, of the American edition of this book, we cannot speak too commendatorily. It is a very jewel of its kind; the paper, the printing, and, above all, the wood-cuts, are as excellent as we could desire, and reflect the highest credit upon all who have been instrumental in the publication. We do most sincerely hope that the publishers will be amply encouraged, by the ready sale which this volume finds, to issue all their works in the same style. How infinitely more agreeable it is to read such a book as this, than those which we are commonly obliged to use!

Our pleasant task is now finished, and we take leave of our author and of our readers, assuring them that we know of no volume on the principles of surgery which can compare with Professor Miller's, in the scientific character of the doctrines which it enunciates, and the happy manner in which they are applied to the practical duties of the surgeon.

ART. XV.—*Report of the Births, Marriages, and Deaths of Massachusetts, for the year 1850.*

Eight Reports of the Births, Marriages, and Deaths of Massachusetts, for the eight years and eight months, from May 1, 1841, to December 31, 1849.

Two Reports of the Births, Marriages, and Deaths of the State of New York, for the years 1847 and 1848.

A Memorial to the Legislature of Louisiana, for the Registration of Births, Marriages, and Deaths, on behalf of the Louisiana State Medical Society.
By J. C. SIMONDS, M. D.

EVERY contribution to vital statistics is a gift to humanity. Every fact or collection of facts of this nature aids, in its degree, in the elucidation of that great subject, the value of human life, and the circumstances and causes that impair or increase it. We are thankful, therefore, for the new and ninth annual report of the births, marriages, and deaths of Massachusetts, which shows the number of, and many of the circumstances and conditions connected with, those facts as they took place in that commonwealth during the year 1850.

There are now nine of these reports from Massachusetts before the public. They cover a period of nine years and eight months, from May 1, 1841, to December 31, 1850. And we have the promise of another, the tenth, for 1851, as soon as the returns from the several cities and towns can be condensed and digested into due form in the office of the Secretary of State. The people and the government of that State having entered upon this path of vital registration, and persevered so long in its course, with improving efforts and results, there is no reason to apprehend any faltering or failure. We may, therefore, confidently look for these annuals in future years.

This system of registration, as applied to States, is almost new in this country. It has been in operation for some years in some of the European nations. It was first established in England and Wales in July, 1837. The government then and since caused the births, marriages, and deaths to be registered in all the parishes and districts of the kingdom, and the whole is annually gathered and condensed and published in a large octavo volume.

The English reports are of great value; besides the registry of the great facts of life, they contain the localities, dates, and circumstances of these events; the causes of death; dissertations upon sanitary subjects, the prevalence and the severity of various diseases, the value of life in various conditions, and upon life insurance. Hence these volumes of English mortality have a value beyond the mere history of the facts which they record.

In America, we have hardly made an approach to the fulness and completeness of the English system. Our reports consist mainly of the three great facts of life—birth, marriage, and death. With the exception of a valuable letter of Mr. Shattuck in the fourth report, and some excellent observations of Dr. Curtis in the eighth report, there are no dissertations on life and death, the conditions that affect the force of mortality, or upon the progress of population, in any of the series of the reports of Massachusetts.

The reports of the State of New York, although valuable in themselves and useful as far as they go, are still more meagre than those of Massachusetts. They were published for only two years, 1847 and 1848. Since then, they have been discontinued. This is a matter deeply to be regretted, for there was much to be hoped from these sanitary and mortuary registers of the great

State of New York, and from the influence of her example upon other States. It was a natural and a reasonable expectation, that New York would give to the world as much light upon these matters, from the record of her own experience, as she has upon education, crime, agriculture, and natural history, in her large and instructive reports upon these subjects.

In Pennsylvania, the movement has already been begun. A law requiring the registration of births, marriages, and deaths has been enacted, which, although it falls short of what is desirable, yet is a very satisfactory beginning, and we trust a foretaste of much that is to come.

The Louisiana State Medical Society, and the Physico-Medical Society of New Orleans have petitioned the Legislature of that State to establish a system of registration of births, marriages, and deaths in Louisiana. The memorial was prepared by Dr. J. C. Simonds, of New Orleans, an able and earnest advocate of this measure, and from the clearness of the argument, and the satisfactory nature of the reasons set forth, we believe the petition will be granted.

In some other States, the friends of this system are striving to awaken public attention to it, in the hope of ultimately procuring its adoption by their several legislatures.

Several cities have made and published their records of these great events of life in various degrees of fulness. Some have given merely the numbers of those who were born, and married, and died. Some others have added the dates of all these events, the causes of death, the ages and sexes of the deceased, and other particulars of great value. We have these annual reports from New Orleans, Charleston, Washington, Baltimore, Philadelphia, New York, Providence, Boston, and Lowell. They differ widely in their character and completeness, and most of them grow better and more satisfactory with increasing experience. The annual reports of Philadelphia, always meagre, have not latterly been regularly published since the year 1846. Those for the years 1847, 1848, and 1849 have been issued only within a few weeks, and we are still without those for 1850 and 1851.

Our present purpose is not to notice the reports of these cities, but to analyze those of Massachusetts and the State of New York.

The earlier reports of Massachusetts and those of New York are very incomplete. This was expected. It was so in England. It requires the co-operation of a great many officers, and of almost all the people, to produce full and correct returns. No central office, however well organized or powerful, no officers, however intelligent and efficient, can collect the births, marriages, and deaths alone, from any State or nation. There must be numerous agents or officers distributed for this purpose in all the districts and localities. Besides this, they must receive the active aid of some member of, or some person familiar with, every family in which either of these events takes place.

It is not to be supposed, that the whole people will, at once, and immediately after the enactment of any registration law, yield to it full and active obedience. We consequently find, in the earlier reports of England and Massachusetts, and in those of New York, from the officers that have charge of them, complaints of the entire neglect of many towns, and of the manifestly imperfect returns of some others.

In Massachusetts, there were thirty-five towns out of three hundred and five in the State, containing 76,654 inhabitants, that made no returns in 1842, the first year that they were required. Eight other towns, containing 18,183 inhabitants, made no return of deaths. Twenty-six towns, containing 83,092 inhabitants, returned no births. Three of the smallest towns in the State, with a total population of only 951, reported no marriages in that year.

The returns from many other towns were evidently incomplete. The clerks of some of them seemed to have returned to the Secretary of State only such of these facts as happened by accident or otherwise, to come to their knowledge. They had taken no pains to obtain them, and had put in operation no active inquiry.

The consequence was, that there were returned in that year, 1842, and published in the first report, only 8741 births, 5742 marriages, and 9544 deaths, in a population of 737,326.

In the next year, only thirteen towns failed entirely of this duty; all the rest reported an increase of births, marriages, and deaths. From that time, there has been a gradually increasing attention to the requirements of the law until 1850, when reports were received from every city and every town in the State but eight, which contained 19,087 inhabitants. The returns last received bear evidence of much more accuracy and completeness; and probably most of them contain all of those events that occurred in the cities and towns. This ninth report stated that there were 27,664 births, 10,345 marriages, and 16,606 deaths, among 975,578 people in 1850.

The two reports from New York bear the same evidence of incompleteness. The Secretary of State says, in his first report, that he had received returns from the clerks of all the counties but Washington. But there were one hundred and ninety-nine towns that made no returns to the county clerks. Only one city, New York, made these returns. Some other towns reported only the marriages, some only the births, and some only the deaths, and some others reported two of these classes of facts. A considerable proportion of those which were received, plainly included only a part of the facts. Copake, with 1607 inhabitants, in 1840, reported 3 marriages and 56 births in 1847. Ephratah, with 2085 inhabitants, reported 3 marriages and 73 births. Scipio reported 3 deaths in 2136 inhabitants. Chester reported 8 births, 5 marriages, and 4 deaths among 1744 people. New Windsor reported 20 births, 1 marriage, and 12 deaths, in a population of 2474.

This first report stated that there were 35,897 births, 11,437 marriages, and 17,263 deaths, in the year 1847, in the towns and cities which had made returns.

The second report, that for 1848, showed a little improvement. Returns were received from all the counties but Clinton and New York. Two hundred and twenty-five towns and seven cities failed to make returns. The others reported 33,621 births, 11,582 marriages, and 18,578 deaths.

Here was a deficiency of twenty-six towns and seven cities, including New York, which had made returns in the previous year. Here was also a decrease of report of 2275 births, but an increase of 155 marriages and 1315 deaths. As the decrease of reported births was in a smaller ratio than the decrease of reporting towns, and as there was an increased report of the other parts, it is reasonable to suppose that there was a greater fulness and accuracy in those returns that were made, and that the tables showed more truly the ratio of births, marriages, and deaths, to the living, in 1848, than in 1847. There might have been some special reasons for the entire neglect of the failing cities and towns. But it is apparent, that the officers of the other cities and towns made more effort to obtain all the facts, and return them to the Secretary of State.

These are all the reports that have yet been made by the State of New York. What progress or improvement will be made in the succeeding reports, if they ever appear, is yet to be seen.

These eleven reports of Massachusetts and New York are all that have yet

been made to the public by any State or national authority in respect to the great facts of life and mortality in America.

The English registration system met with similar imperfect success in its early years, and fell short of the ideals which the law had marked out. But as in Massachusetts the returns became more and more complete, until now they seem to contain all the facts required. The first report for 1837-8 included 399,712 births, 111,481 marriages, and 335,956 deaths. The fifth report included 512,158 births, 122,496 marriages, and 343,847 deaths. The twelfth report included 578,159 births, 141,833 marriages, and 440,853 deaths in 1849.

This progress from deficiency and incompleteness to fulness and completeness is what must be expected here and everywhere. All systems of this nature must pass through the same probation of ill success and improvement before they can gather and give to the world such a complete set of facts as may be received as the basis of all desirable calculations upon population and mortality, and especially such as will afford unquestionable ground for comparison of one State or nation with another in respect to these matters.

This imperfectness in these reports is frequently used as a charge against them, and a valid objection to the whole system of registration. On this ground the opponents of such a law resist it before it is established, and its enemies find reasons therein to attempt its overthrow after it has begun its operations. Without doubt, the friends of the system sometimes claim too much for it. They present their few facts in such a way, and draw such inferences from them as are not justified by statistical science.

It would be unphilosophical to compare the rate of mortality of New York and Massachusetts or England on the basis of the reports we have of the former State or of the earlier reports of the latter. The average number of deaths in New York in the reported years, compared with the population of the whole State, gives a mortality of 1 in 145 inhabitants. Or, if we compare the deaths with the population of the towns reported, we must still include many such towns as Summit, which reports a mortality of 1 in 393, and Waterloo, whose mortality is reported to be only 1 in 726 of the living, and others of a higher ratio, but still falling short of the probable facts.

A similar difficulty would be found in the early reports of Massachusetts, which in the first two years reported a rate of mortality of 1 in 72 of the living in the whole State. If we omit the towns that made no report, we must still include such towns as Seekonk, which returned 1 death in 1996, and Attleboro, which reported 1 in 3585 of its people. The rate of mortality should not be attempted to be deduced from these returns until the system shall be so completely established as to insure the report of all the deaths among any definite number of people.

There are other facts of great value that may be established by this system of registration, although the returns may be incomplete as to number.

It is important as a matter of political economy to have such public and permanent records concerning every individual, that he may be able to establish his identity, his personality, and his relation to others; and also that the public authorities may be able to describe and to trace him.

Therefore, the great facts of his being, his birth, marriage, and death, should be put on record with as many circumstances respecting him and these events as will show beyond doubt his origin and connection. The first record, that of birth, should contain the date and place of the event, the name and sex of the child, the names of both parents, the occupation of the father. The

second, that of marriage, should show the names, birth-place, ages, residence, parentage of both parties, the occupation of the husband, the date and place of the ceremony, the name of the person by whom it was performed, and whether this be the first or any subsequent marriage of either party. The final record, that of death, should show the date, place, and cause of death, the sex, age, occupation, and civil condition of the deceased, and where the interment took place.

These are the primary facts which should be registered and returned to the State or national authority. Then they can be so arranged and combined as to admit of a great variety of deductions very important to humanity.

The value or the expectation of life may be determined or rather approximated by these facts. The average duration of life in any place or among any people is modified by many other facts and circumstances, and mostly by the composition of the population. Thus, if a town or State be new, and composed mostly of youth and young families, the bills of mortality will be filled mostly with persons in the early periods of life. The average longevity of those who die in such a community would of course be less than in an older State, which included a due proportion of persons in the older and more advanced periods of life. In a stationary population, where none come in except by birth, and none go out except by death, and where it has been so during the period of the longest possible life, this average longevity of the deceased is a fair criterion of the chance of one's existence there. But in proportion as immigration brings any in, and increases the ratio of any class, or as an emigration carries any out and diminishes the proportion of any class, this average is lower or higher according to the kind and degree of the disturbing element.

Nevertheless, imperfect as may be the deductions made from these data, they are still of value, and in the hands of cautious reasoners they will be of great service. Therefore, we need to have the precise age of each deceased individual stated, and the whole presented in tables and classes of very small periods.

A table containing the ages in classes connected with the causes of death shows at what period of life certain diseases are fatal or otherwise.

A table showing the ages in classes connected with the counties, towns, or other localities shows with what different degrees the local morbid and fatal influences press upon human life at the various periods of existence. It is an admitted and perhaps an established fact that residence in a compact city is less favourable to infant life than a residence in the open country. Massachusetts seems to be more favourable to the developing and forming periods of life under 20 years than England, Denmark, and some other countries of Europe; but on the other hand, it seems to be less favourable to life during the period of action and responsibility from 20 to 60 years than those other nations. Differences of this nature between localities, districts, and countries of different character might be shown by an extended and complete arrangement of the bills of mortality according to this plan.

The ages connected with diseases show how far the causes of death affect the various periods of life. Thus, convulsions and hydrocephalus prevail mostly in childhood; consumption in the third and fourth decade of life; and apoplexy and palsy in the later periods. Many other and important principles of this nature might be elicited and established by this arrangement.

A table, combining age, locality, and disease, would show whether the causes of death have the same influence in various places. Dysentery may be more fatal to childhood in one place, and to adults in another.

Combining disease with occupation shows whether the former have any

connection with the latter, and to what extent. Age with occupation shows whether the circumstances or the exposures of one are more injurious to life than those of another.

The date of death standing alone is important as showing the effect of the seasons upon life; connected with the age, it shows the effect of the season upon the different periods, as the warm season is usually more fatal to infancy, and the cold season to old age. The date connected with disease shows when the different maladies prevail; as diseases of the digestive organs are commonly more prevalent in the summer and early autumn, and pulmonary diseases in the winter and early spring. The date in connection with locality shows the effect of season on various places; as the summer may be more unfavourable to the city, and the winter to the country.

The sexes should be exhibited in all these various combinations to show the influence of age, locality, disease, and season upon males and females.

The localities should be as small as the divisions of the country will admit. It is not enough that these facts should be given in counties, but they should be given in towns and if possible in smaller districts, in order to define with the utmost exactness the degree and kind of local influences. If the diseases, &c., of Massachusetts and New York were stated as they are in England in towns, it would be easy to group all the mountainous towns into one class, and all those in dry plains in another, and all those in swampy and marshy districts or along the low borders of sluggish rivers in another, and those on the sea-coast in still another; and thus the local influences could be determined. Some of the counties in these States include several or all of these varieties of country. The County of Middlesex in Massachusetts extends from the sea-coast on the east more than forty-five miles westward to the almost mountain region of the interior.

In order to present the results at one view, all the localities should be grouped and arranged in classes according to their natural and artificial affinities. Those on the sea-coast should be in one class, those in the interior in another, those in the mountainous regions, those along the low banks of sluggish rivers, exposed to bogs, and perhaps to miasmata, those on the level and dry plains, the compact cities and towns, and the sparse rural districts, the manufacturing and the commercial districts, all these should be arranged in distinct classes, and then the various circumstances and combinations of circumstances, as age, disease, season, sex, &c., stated in connection with them.

These tables would show whether there are any, and how great may be the difference of the morbid influence in these several classes of localities, and lead to the investigation of the nature and character of these influences or causes of disease. The fact that a definite disease exists or prevails in one district, or in one range of circumstances, and not in another, justifies the necessary inference that the cause of disease exists in the former, and not in the latter, yet it does not explain what that cause may be. This is a matter of further inquiry. But this may be limited to the conditions or circumstances or habits that are to be found in the locality where the disease prevails, and not in the other where it was not.

The excess of mortality from typhus fever, cholera, and dysentery, in the narrow lanes, closed courts, and crowded dwellings of some of the poor in Liverpool, London, and other cities of Great Britain and elsewhere, led to the examination of those localities and dwellings, and revealed their foul air laden with animal exhalations, the absence of household and personal cleanliness, and the privation of comforts which the occupants endured. These being found almost universally in such places, and these malignant and viru-

lent diseases of depression being found more there than in the broad, open, and clean streets, and the airy and comfortable dwellings that border upon them, lead to the natural supposition that these are the causes of this class of disease.

The large excess of mortality from consumption among females over that among males, opens to the inquiry whether the female organization renders women more susceptible of this disease than men, or whether the female costume that covers the neck and chest less, or her habits of in-door life or want of frequent and vigorous exercise, expose her more than the male to this malady.

If we could obtain a registry of mortality from consumption in countries where the habits of the two sexes, in regard to occupation and labour, are nearly alike, and women work with the men in the field, this would determine the influence of one of the circumstances, and show whether in-door life and comparatively inactive habits have any influence in producing this disease. If in such a country there should be found as great a disproportion of phthisis in the two sexes as here where their habits differ so widely, it would lead to the conclusion that these habits had no such injurious influence as is here supposed. But if it should be found that in those countries where women laboured abroad like men, they had no more consumption than their brethren, it would be reasonably concluded that the in-door and quiet life in other places opened the way to the attack of this disorder.

Much light might be derived from a registration of mortality and its causes among the field slaves of the South, where the employments and habits of the sexes are very nearly alike.

These facts increase in value with their increasing numbers. The greater the number of cases presented in which certain facts are associated with or follow certain conditions, the more true is the deduction that these facts belong to or grow out of those conditions, and that the one is the cause and the other the consequence. We need, therefore, not only the record of the mortality and the attendant conditions and circumstances from a single district and for a single year, but we want this to cover as many districts and include as many people as possible, and also that the experience and observations of each successive year should be added to those of all preceding years.

When the groups or classes include only a few facts, the deductions from one may differ very much from those drawn from another. Thus in the Massachusetts reports, the tables of the average longevity of persons engaged in various occupations, show a great and enormous difference, in different years, in some occupations which include but few; but in those occupations which include many, there is nearly the same average from year to year.

Having thus stated what is desirable in these registration reports, it is worth while to examine those already published, and see what they have done and how near they come to the proposed ideal.

The primary facts from the districts and towns required by the law and gathered by the clerks, are nearly the same in both Massachusetts and New York, and through all the years in which they were obtained. But there may be a great difference in the manner in which these original facts are digested and presented to the world. There is a great variety of ways in which they may be arranged and combined, and in the deductions that may be made from them. This work of preparation should then be entrusted to such persons as thoroughly understand and appreciate this branch of vital and statistical science; such as can add experience in this matter to a careful study of its means and objects. A suitable person, having a clear conception of what

should be done with, and what advantages may be derived from, these facts, would begin with a well-digested and comprehensive plan, and carry it out from year to year, and thus annually add new value and new strength to the principles that may have been set forth and established. The registration officer should, therefore, be selected as a judge or a professor, for his peculiar fitness for the office, and his term of office should be secure from all change, because every year's experience makes him more valuable.

Unfortunately, neither in Massachusetts nor in New York is a special officer appointed for this purpose; but in both it is left in the hands of the Secretary of State, whose office is a political one, and liable to be changed with the success or defeat of political parties.

The nine reports of Massachusetts have been prepared and published under the direction of four different secretaries, and as this officer is necessarily overburdened with the duties required of him by the law and custom, he is obliged to delegate this work of digesting the returns of births, marriages, and deaths, to some subordinate officer or agent. These nine reports have been prepared by almost as many hands; consequently, they differ in their character and purpose. No two of them are alike. No single plan has been adopted and carried through all. Each one of the reports is valuable in itself; but they, collectively, do not form one whole. Each successive report is not made more valuable than its predecessor by including the sum of all previous facts and observations, and thereby strengthening its own deductions. Although these reports have a general similarity, and a seeming sameness of purpose, and satisfy the wants of most persons, especially those who look at them only to learn the bare facts of the year reported, yet those who desire to learn from them the permanence or change of facts, to draw safe deductions, and establish principles on the broadest foundation, are disappointed.

The population, births, marriages, and deaths of Massachusetts, in each town and county, during the year reported, is stated, in one table, in all the reports but the third.

The population and births, population and marriages, and population and deaths, in each town and county, are stated in three separate tables in the third report.

The same table includes the births, marriages, and deaths, during each of the two previous years, separately, in the fifth, sixth, seventh, and that part of the eighth report that includes these events during the eight months next succeeding May 1st, of 1848. In the fourth report the table includes these facts during the three previous years. But this mention of the facts is omitted in that part of the eighth report that includes the events of 1849, and in the ninth report.

The births in each town and in each month are stated in the third report.

The births and sexes in each county are stated in the third and all subsequent reports. The same is stated in regard to each town in the third.

The plurality cases of birth, with the sexes in each county, are stated in the third.

The same facts in each month are in the fourth and all subsequent reports.

The third report informs us how many children were born whose fathers' occupation was reported to the Secretary of State. But this is all. We are only told how much the Secretary knows, and how faithful the people have been in instructing him. But what he knows, what his facts are, we are not informed. It might be desirable to know what proportion of the births was in families of the various social conditions, and engaged in the various occupations.

The marriages in counties and months, and the previous condition of each party, whether single or widowed, is stated in the third and all subsequent reports.

The ages of the marrying parties, in classes, are in the fourth and all following reports.

The average age of the marrying parties in each condition of first, second, or third marriage, is in the third report.

The nativity of the marrying parties in each town, whether native or foreign, is stated in that part of the eighth report that relates to 1849, and in the ninth relating to 1850.

In none of these reports are the facts of the preceding years brought together to show, at one view, the proportion of first, second, and third marriages of each sex, in different months, at the various ages, or in the different counties.

The same variance of plan and execution, the inclusion of some facts in some years, and their omission in other years, is shown in the reports of the deaths.

The population and mortality is given, for each town, in all the reports.

The deaths, in each of the two previous years, are stated in the third, fifth, sixth, and seventh reports, and those of the three previous years are in the fourth.

In all these five reports these facts are stated separately for each year. But in the report for 1848, the deaths, in the three years, are stated in the aggregate, and the average for each year is shown. And in the reports for 1849 and 1850, no mention is made of the mortality of the previous years.

The ratio of mortality to the living in each county, and also in two divisions of eastern and western counties, for 1849, is stated in the eighth report.

The sexes of the deceased, in each town and county, for the years 1848, 1849, and 1850, separately, are stated in the eighth and ninth reports.

The sexes of the deceased, in each month and each county, are stated in the third, eighth, and ninth reports.

The ages in classes, in respect to counties, are in the second, third, and fourth reports.

The ages, in respect to diseases, are in all the reports.

The diseases, in respect to counties, in respect to months, and in respect to ages, are in all the reports; but they are stated as separate facts.

The diseases, in respect to sexes, are stated in the fourth and following reports.

The diseases in respect to birth-place, whether native or foreign, are in the fourth, fifth, sixth, and seventh reports.

The diseases in city and in country are shown, for the year 1849, in the eighth report.

The whole number of deaths from each disease, and the proportion of those from each disease to the total deaths, in the year 1849, in the eight months of 1848, and during the seven previous years, are stated separately in the eighth report. Similar statements for 1850, 1849, and the seven preceding years, are in the ninth report, and for three years separately, in the fourth, fifth, sixth, and seventh reports.

The average age of the deceased, for the reported year, is stated, in respect to towns, in the third, eighth, and ninth reports, and in respect to counties and the State in the third, fourth, eighth, and ninth reports. And also the average longevity of the married and of the unmarried, who were over twenty

years old, is in the fourth, fifth, sixth, and seventh reports. The average longevity, in some towns in America, and England, and Genoa, including a series of years, is in the fourth report.

The average age of males over 20, in the several occupations, is in all the reports for each year. That of females, in some occupations, is in the fourth and following reports.

The same is stated for the two preceding years, separately, in the fourth, fifth, sixth, and seventh reports. This average for the year 1849, and the eight months of 1848, in one column, and for the five preceding years in another column, is stated in the eighth report. It is stated, for the year 1850, in one column, and for the preceding six years and eight months, in another column, in the ninth report.

Dr. Josiah Curtis, of Boston, to whom, fortunately, the preparation of the eighth report was committed, added to that several valuable tables, showing, among other things,

The number and proportion of native and foreign population in Massachusetts, at the three several censuses of 1830, 1840, and 1850.

The number and proportion of natives and foreigners, the population to the square mile, the dwellings, and barns, in 1850; the number and ratio of births, marriages, and deaths, to the living, in 1849, in each county.

The number of births, of foreign and native parentage, in the cities and large towns, and in the rural districts; and also the number and average age of persons dying in the same in 1849.

Comparative ratio of male and female births in the eastern or sea-coast counties, and in the interior, in the cities and in the country.

Number and sex of persons dying of consumption and of dysentery in each month.

Number and proportion of deaths of each sex, at the several periods of life, in the city and in the country.

Thus we see that these nine reports of Massachusetts afford a great amount of facts, and ground for many deductions as to the progress of population and mortality.

And yet, though so much is done, there is much more to be desired. There was no clear and definite plan in the beginning; none which, being once adopted at any time, has been carried out through all the subsequent reports, adding the experience of each year to the gathered experience of the preceding years. Each successive officer seems to have arranged the work according to his own notions, and made such exhibitions of the facts that were received, and drawn such deductions from them as seemed to him, at the time, most important, without regard to the plan and the work of his predecessors.

Consequently, although, from the returns made to the Secretary of State, sixty-five facts or combinations of facts and deductions are stated in one or more of the reports, and might have been advantageously stated in all, only seventeen of these are presented in all the reports. Of the others, some are given in only one, some in only two or three reports; some are presented, then omitted and presented again; and others are brought out in the third or later report, and continued in all that follow afterwards.

In regard to none is the sum of the observations of the previous years added to those of the reported year, and the deductions drawn, and the principles established, from the largest amount of data. This is singularly shown in the tables of longevity, both of the whole number of persons dying and of those in the several occupations. The statement of the average duration of life is valuable as a reliable principle only when it is taken from a large number of persons, and the more the facts are multiplied, the more nearly

does their average approximate the truth, and increase the value of the deductions drawn from them.

It would seem, therefore, to be the most reasonable plan to include, in this calculation of the longevity of the deceased, in any state, county, town, or class, all who had been known to have died in the places or conditions under consideration. But, in the first seven reports, only the facts, the number of deaths, and the average age of the deceased in the various occupations, in a single year, are presented as the basis of calculation.

In the fourth report, these facts for 1845, and also for 1844, 1843, and 1842, are stated in four separate columns. In the fifth, sixth, and seventh reports, the same facts for the reported years, and for each of the two preceding years, in three separate columns, are stated.

In the eighth report, the deaths, during the twenty reported months, in the several occupations, are included in one sum and column of sums, and those during the five previous years in another sum and column of sums, and the average drawn from these separately. In the ninth report, these facts are stated, and averages drawn from the facts of 1850, and of the previous six years and eight months, in two separate columns. In neither of these reports is the whole sum of the facts added, and the average drawn from this the widest field of observation.

Where the observations are few, in each year, their averages differ. Thus, the longevity of the furnace men is stated to be 22 years in 1846, and 63.75 years in 1847. That of gunsmiths was 30 years in 1844, and 80 years in 1846. That of bookbinders was 29 years in 1845, and 66 years in 1848. These are extreme specimens; but they show the error of taking averages from a small number of facts. But, in some other occupations which include large numbers of deaths, the average approaches a similarity that indicates the value of the inference. Thus, the agriculturists, farmers, and gardeners, whose deaths, during the nine years and eight months reported, were 7150, averaging 735 a year, had an average longevity of 66, 66, 64.02, 61.64, 61.64, 66.63, 65.41, 62.39, and 65.93 years. The 1008 carpenters who had died during these successive years had an average longevity of 62, 48, 51.52, 52.26, 48.94, 48.01, 47.56, 48.94, and 49.61 years.

The two reports which we have from New York are for the years 1847 and 1848. Since the last date no returns have been made to the Secretary of State, and of course no report has been published. The law is not repealed, but it is inactive. It had not time during its two years of operation to take such hold upon the people as would convince them of its usefulness.

These two reports are the same for both years. They present the same facts, the same tables, and the same deductions. There are five tables.

The first includes the population, births, marriages, and deaths, in each town and county.

The second states the births, in each county, 1st, in each month; 2d, the sexes and colour of each sex; and 3d, the number of illegitimate.

The third shows the marriages in each county. 1st, as to months; 2d, as to color and sex; 3d, the approximate ages of each sex.

The fourth shows the deaths in each county. 1st, as to months; 2d, as to colour of each sex; 3d, the married and unmarried of each sex; 4th, number in each profession, and average age in each profession in the whole State.

The fifth states the deaths, 1st, diseases, ages, and sexes; 2d, diseases, month, and sex; 3d, diseases, nativity, and sex.

The plan of the first report is carried out in the second. But each one stands alone. In the second, no reference is made to the first. The average

age of the last is based solely upon the experience of that year; and no opportunity is there offered for comparing the facts and experience of 1848 with those of the previous year.

The ninth report of Massachusetts is more full than any of its predecessors. It is so complete that the secretary enters into the calculation of the ratio of births, marriages, and deaths, to the whole living population. In 1850 there were 27,664 births, 10,345 marriages, and 16,606 deaths, in all the cities and all the towns but eight, the whole containing a population of 975,578. Calculating the ratio in the eight unreported towns by the ratio of the other rural districts, there were in the whole State 28,172 births, 10,538 marriages, and 16,901 deaths in the year 1850. This was one birth in 35.31, one marriage in 94.52, and one death in 58.85 of the living.

The rate of mortality in the city of Boston was one in 37.32; in the rest of the State, one in 64.81. In the cities of Boston, Lowell, Cambridge, Charleston, and Roxbury, this rate was one in 42.74; in the rest of the State, one in 65.41.

The mortality was more in 1849, being 20,423, or one in 45.58 of the calculated population.

The mortality was at an earlier age generally in 1849 than in 1850. Of all the deceased, 39 per cent. were under 5 years of age, 50 per cent. under 20, and 16 per cent. over 60, in 1849. And 37 per cent. were under 5 years, 47 per cent. under twenty, and 18 per cent. were over 60 years of age in 1850. The average longevity was 26.19 years in 1849, and 27.67 in 1850.

The cholera, dysentery, and other diseases of the digestive organs prevailed in 1849 more than in other years. In that year 1188 died of the cholera, 360 of cholera infantum, 2455 of dysentery, and 209 of diarrhoea, making 4063 of these diseases, and about 20 per cent. of all from known causes. The mortality from all diseases of the digestive organs was 6,143 or 30 per cent. of all.

In 1850, the deaths from cholera were 65; cholera infantum, 252; dysentery, 1188; diarrhoea, 172; in all 1677; and 11 per cent. of all from known causes. The total mortality from diseases of the digestive organs was 3,438, or 21.88 per cent. of all.

The mortality from the zymotic diseases, including the endemic, epidemic of contagious disorders, was 7,520, or 38 per cent. of all from known causes in 1849, and 4,357, or 27 per cent. of all in 1850.

The mortality from pulmonary diseases was about the same in both years, being in 1849, from consumption, 3606; pneumonia, 815; other diseases of the lungs, 759; in all, 5,180. In 1850, the deaths were, from consumption, 3,257; pneumonia, 838; other diseases of the lungs, 832; total, 5,297. It is manifest that the deaths from this class of causes have a much larger proportion to the whole mortality in 1850 than in 1849; being of consumption, 22 per cent. in 1850, and 17 per cent. in 1849; and of all 32 per cent. in 1850, and 25 per cent. in 1849. Compared with the whole population, from which returns were made, the deaths were from diseases of the digestive organs, one in 151 in 1849, and one in 183 in 1850; from diseases of the lungs, one in 179 in 1849, and one in 184 in 1850. The mortality from the zymotic class was 7,520, or one in 123, of the people in 1849, and 4,357, or one in 224 in 1850.

Locality.—The effect of locality, or the power of local influences may be traced to a certain degree in these reports. Massachusetts covers but a small extent of territory, but there are marked differences in its character. Its

length from the sea-coast westward to the line of New York is only about two hundred miles. The country near the Atlantic is low and level through Barnstable, Plymouth, Bristol, Nantucket, and Dukes Counties, and hilly but not high, through Norfolk and Essex Counties. The interior is higher and more hilly, and some of it, especially the region west of the Connecticut River, is mountainous. The eastern division is exposed to the east winds, which are chilly and oppressive to those who are subject to pulmonary diseases. The western division is more out of the reach of these winds, and mostly protected from them by the high lands of Worcester County, which run through the State from New Hampshire to Connecticut.

The eastern counties contain many large towns and some cities; and the population of the whole is much more dense than that of the western counties. A large proportion of the inhabitants of the eastern sections are engaged in trade, commerce, and manufactures; while those of the western sections are principally employed in agriculture. The seven Atlantic counties, Essex, Norfolk, Plymouth, Barnstable, Bristol, Dukes, and Nantucket contained in 1850 a population of 390,579, and 164 to the square mile. The five interior counties, Worcester, Franklin, Hampshire, Hampden, and Berkshire, contained 294,308 inhabitants, and 60 to the square mile. Boston has 136,884 people. Middlesex County, with 161,385 inhabitants, includes the cities of Cambridge and Charlestown, and some large towns bordering on the bays and the sea-coast, and also a wide agricultural territory extending to the highlands in the interior. This county, therefore, belongs exclusively to neither of the divisions herein described.

The returns of the deaths, for the years 1849 and 1850, are sufficiently complete to justify a calculation of the rate of mortality in the towns that were reported. Taking the average of those two years, and comparing this with the average calculated and enumerated population, we have the facts of the deductions in the following table:—

Average Annual Mortality in Massachusetts in the years 1849 and 1850.

	INTERIOR COUNTIES.		SEA-COAST COUNTIES.		CITY OF BOSTON.	
Average population for 1849 and 1850	284,663		371,885		134,819	
	Mortality.		Mortality.		Mortality.	
Causes of death.	No. of deaths.	In 10,000 living.	No. of deaths.	In 10,000 living.	No. of deaths.	In 10,000 living.
All causes	5113	179	6194	152	4373	324
Zymotic diseases	1751	61.6	1759	47	1666	123
Diseases of digestive organs	1255	44	1177	31	1078	79.9
Diseases of respiratory organs	1420	51	1928	51	1088	80.7
Consumption	1003	35	1415	38	615	45

It appears from these facts that the rural districts, near the seacoast, were more favourable to life, during these two years, than the interior. But the rate of mortality, and especially from diseases of the zymotic class and of the organs of digestion, in the city of Boston, was more than twice as large as that of the other Atlantic districts. The mortality from endemic, epidemic and contagious diseases, and from all diseases of the digestive organs, was more in the interior than on the sea-board. Consumption was somewhat more fatal on

the sea-coast than in the counties distant from the ocean, and considerably more prevalent in the city than in the country.

The average longevity appears to have been nearly the same on the sea-coast and in the interior. The average age for each county is stated in the reports for the years 1843, 1849, and 1850, and the periods within which the deaths took place in the several counties are given in the reports for 1841 and 1842. From these last, the average age can be calculated. Hence we obtain the number of deaths, and the average longevity in the different districts of the State, as in the following table. The numbers in regard to Boston are taken and calculated in part from the city bills of mortality, and include nine years from 1842 to 1850.

Mortality of Average Longevity in Massachusetts.

	Number of Deaths.	Average Longevity.
Seven Atlantic counties, five years	22,419	31.8
Five interior counties, five years	18,397	32.13
Boston, nine years	27,545	21.27
Middlesex, five years	9,766	27.13

By this, we see that there was, during these periods, but little difference in longevity produced by the exposure to, and protection from, the atmosphere of the ocean. But there is in this respect a very marked difference between the city and the rural districts, whether on the sea-board or in the interior. The longevity was fifty per cent. greater in the country than in Boston. Middlesex County, which includes the cities of Lowell, Charlestown, and Cambridge, as well as its open districts, shows an average longevity approaching a medium between the others. Probably a part of this difference is due to the fact that Boston and Middlesex have both grown much more rapidly, within the last ten years, than the rest of the State. They have, therefore, among their population a larger proportion of the middle-aged, the young, and children, whose natural and necessary mortality would diminish the average longevity of the whole. They have also a large, and Boston a very large foreign population, mostly Irish, whose early marriages and numerous births increase the subjects of early death, and diminish still further this apparent longevity of the whole people.

Influence of Seasons.—The influence of the seasons, the cold and the warm, is observable in these registers, in respect to the mortality from diseases of the digestive and the respiratory organs. This is more marked in regard to the former than in regard to the latter.

In the warm season, from May to October, inclusive, the deaths, from all diseases of the digestive organs, were, in Massachusetts, during the nine entire registered years, 18,831; in New York, during 1847, 1848, they were 3793; and, in both of these States, 22,624. During the cold seasons, from November to April, inclusive, the deaths from these causes were, in Massachusetts, 5,195; in New York, 905; and in both, 6010.

There was much diversity in the proportions of mortality in winter and in summer, from the various diseases of this class. The greatest difference was in regard to dysentery, from which 9515 died in the warmer, and 715 in the colder months. There was nearly the same disproportion of deaths from cholera and cholera infantum, being 3592 in summer, and 263 in winter. The mortality from diarrhoea and bowel-complaints had a similar, though a smaller disproportion as to seasons. On the contrary, there were more deaths from colic, dyspepsia, organic diseases of the stomach, worms, and diseases of the liver in the cold than in the warmer parts of the years.

The mortality from diseases of the respiratory organs was greater in winter

than in the summer, being 14,744 in Massachusetts, 4605 in New York, and 19,349 in both, during the six months, from May to October; and 16,285 in Massachusetts, 5151 in New York, and 21,436 in both, during the six months from November to April.

The greatest difference was in the mortality from pneumonia, being 3770 in winter, and 1794 in summer; and from croup, which was 2028 in the cold, and 1251 in the warm season. The deaths from pleurisy, bronchitis, and influenza, were more in the winter than in the summer. But the other diseases of this class, consumption, hooping-cough, catarrh, and hydrothorax, were somewhat more fatal in the warm than the cold season. The mortality from consumption, during the six warmer months, was, in Massachusetts, 11,462; in New York, 3271, and in both, 14,733; and during the six colder months, in Massachusetts, 10,597; in New York, 3278, and in both, 13,875. Hooping-cough destroyed 810 in the warm season, and 543 in the cold. These are important matters, and deserve a farther investigation, to see how far these diseases are influenced by the seasons. These facts from Massachusetts and New York lead to the suspicion, at least, that winter is no more fatal to consumptive patients than summer. In London, during three years, the deaths from consumption were, in the first and last quarters, October to March, 10,748; and, in the second and third quarters, from April to September, 11,271.

The proportion of mortality from various causes to the whole population cannot be determined here for want of complete returns from those States and towns which are reported. But the ratio of effect of these causes to each other can be shown, and it will be seen that they differ in different places and countries.

Distribution of Mortality from various Causes.

CAUSES.	MASSACHUSETTS.		NEW YORK.		ENGLAND & WALES.	
	Nine years and eight months.		Two years, 1847 and 1848.		Five years, 1838 to 1842.	
	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.
All specified diseases	92,984	10,000	29,449	10,000	1,692,251	10,000
Zymotic	27,415	2,948	9,316	3,159	336,727	1,989
Uncertain seat	11,281	1,213	2,701	919	236,259	1,396
Nervous organs	8,736	939	3,118	1,059	249,905	1,476
Respiratory organs	26,226	2,820	8,516	2,893	459,472	2,715
Circulative "	1,825	196	433	147	21,191	125
Digestive "	5,740	617	1,733	588	108,583	641
Urinary "	386	41	108	36	8,398	49
Generative "	1,094	117	210	71	17,193	101
Locomotive "	466	50	187	63	10,850	64
Integumentary "	116	12	34	10	2,418	14
Old age	6,115	657	1,589	538	182,492	1,078
Violent	3,584	386	1,344	456	58,763	347
All digestive	16,234	1,744	4,905	1,665	132,035	780
All respiratory	29,614	3,184	10,059	3,417	525,956	3,108
Cholera and cholera infantum	3,380	364	193	65	3,490	20
Dysentery	6,056	651	2,240	760	3,068	18
Fevers	7,186	762	2,492	846	83,092	491
Scarlatina	4,259	458	1,064	361	62,911	371
Measles	682	73	295	100	42,413	250
Croup	2,016	216	1,132	387	21,625	127
Hooping-cough	969	104	343	116	39,594	233
Consumption	20,864	2,243	6,713	2,299	296,390	1,751

So far as these facts admit of any inference, there is some difference in the ratio of prevalence of various diseases in England, New York, and Massachusetts. The endemic, epidemic, and contagious diseases bear a much larger proportion to the whole in these States than in England. The diseases of the nervous system were comparatively more frequent there than here. The diseases of the respiratory organs were relatively more abundant in New York than in Massachusetts, and the same in Massachusetts as in England, being severally 34, 31, and 31 per cent. of all. Consumption destroyed 22 per cent. of all that died here, and only 17 per cent. in England. Measles were comparatively more than three times as fatal in England as in Massachusetts, and more than twice as fatal in England as in New York. On the other hand, croup was more than three times as destructive in New York, and almost twice as destructive in Massachusetts as in England. Fevers were comparatively 70 per cent. more fatal in New York, and 55 per cent. more fatal in Massachusetts than in England. Violent deaths occurred in a less varying proportion, being, in Massachusetts, 386; New York, 456; and in England, 347 in 10,000 of all from known causes. There was a greater difference in the mortality from diseases of the digestive organs, being proportionately more than twice as great in these States as in England, and more in Massachusetts than in New York. The most remarkable difference is in the mortality from dysentery. This was in ratio of all, thirty-six times as great in Massachusetts, and forty-two times as great in New York as in England.

The mortality from old age was in a larger proportion in England than in the United States, being 100 per cent. greater than in New York, and 64 per cent. greater than in Massachusetts. This difference is due in part to the difference of population, for it is newer, younger, and more progressive in New York than in Massachusetts, and more stationary in England than in either. The English population, therefore, includes more in the later periods of life who may die of old age than the American. Nevertheless, the difference is too great to be wholly attributable to this fact. The number of persons over 70 years old in 1000 of all ages, were 16 in New York, 27 in Massachusetts in 1840, and 28 in England in 1841; whereas the ratio of deaths from old age was, in New York, 53; in Massachusetts, 65; and in England, 107 in 1000 deaths from all causes. The ratio of persons who were over 70, and therefore subject to die of old age, was, in New York, 100; in Massachusetts, 166; and in England, 175. The equal ratio of mortality from this cause, in these States and England, respectively, should be 100, 184, and 175; whereas it is as 100, 122, and 200. Massachusetts then fell far short of, and England somewhat exceeded, the ratio of New York in the mortality from old age.

The average longevity of males over twenty years old, dying in the various professions and occupations, is stated in all the reports of Massachusetts and New York. It would be unprofitable to present here the longevity of each and all of these employments, for many of them included too few persons to allow any confidence to be placed in the deductions that may be drawn from them. Yet these employments may very properly be arranged into classes, according to the similarity of habits which they require, and the exposures to which those who are engaged in them are subjected. These classes are as follows:—

I. Farmers and gardeners, cultivators of the earth. Their habits are active and often laborious. They labour in the open air. They have the means of comfortable living, and are generally free from oppressive anxieties.

II. Labourers, servants, brakemen, chimney-sweepers, coachmen, stage-drivers, hostlers, well-diggers, and workmen in powder-mills. These are gene-

rally the poor. Their lives are laborious. They are mostly employed in the open air. They are subject to much care, and often to privations and discomforts.

III. Active mechanics employed mostly in the open air. Boat-builders, brickmakers, carpenters, calkers, masons, millers, millwrights, riggers, sawyers, ship-carpenters, stonecutters, and tanners.

IV. Persons actively employed abroad on the land, but not as cultivators of the earth nor as mechanics. Army-officers, baggage-masters, butchers, colliers, drovers, engineers and firemen, expressmen, ferrymen, gate-keepers, light-house keepers, lumbermen, news-carriers, peddlers, pilots, sextons, sheriffs and constables, soldiers, stablers, stevedores, surveyors, teamsters, watchmen, weighers, and gaugers.

V. Active in-door mechanics who have much and almost constant exercise, and are protected from the elements, and generally in warm shops. Axegrinders, bakers, basket-makers, blacksmiths, bleachers, bloomers, bookbinders, brush-makers, cabinet-makers, calico-printers, card-makers, carriage-makers, chaise-makers, coach-makers, chair-makers, churn-makers, cloth-makers, clothiers, comb-makers, confectioners, cooks, coopers, coppersmiths, curriers, cutlers, distillers, dyers, file-cutters, founders, furnacemen, glass-blowers, glass-cutters, gunsmiths, harness-makers, hatters, leather-dressers, machinists, maltsters, match-makers, morocco-dressers, nail-makers, paper-makers, painters, pianoforte-makers, pill-makers, potters, pump and block-makers, reed-makers, rope-makers, sail-makers, sash-makers, screw-cutters, soap-boilers, tallow-chandlers, tinsmiths, tobacconists, trunk-makers, turners, wagon-makers, weavers, wheelwrights, upholsterers, victuallers, and woolsters.

VI. Sedentary and quiet mechanics, &c., employed within doors. Artists, barbers, cigar-makers, dentists, engravers, goldsmiths, jewellers, operatives, portrait-painters, printers, saddlers, shoemakers, shoecutters, silversmiths, tailors, watch-makers, whip-makers, comedians, and musicians. Their employments do not usually give them as much exercise as their health requires. They are protected from the elements, and are mostly occupied in warm shops.

VII. Seamen employed on the ocean and the lakes—sailors, fishermen, and naval officers. They are exposed to severities of the weather, and occasionally to some privations.

VIII. Merchants, traders, grocers, apothecaries, druggists, booksellers, stove-dealers, provision-dealers, clerks, manufacturers, speculators, bankers, bank-officers, brokers, capitalists, gentlemen, innkeepers, postmasters, railroad agents and conductors, ticket-masters, and superintendents of factories. Their occupations require little or no bodily labour, but some or much exercise of the brain. They are principally engaged in the affairs of trade; in making or managing money, or watching the details of business. They are employed within doors, and can generally or always be protected from the elements.

IX. Professional men, clergymen, judges, justices, lawyers, physicians, professors, teachers, students, civil engineers, editors, and public officers. Their occupations require much labour of the brain, and but little of the body. They are engaged much in abstractions and principles, and in the application of these to the common affairs of life.

X. Mechanics, whose special occupations are not stated.

The following table presents the number and the average longevity of the males, over twenty years old, who belonged to these several classes and are reported as having died in Massachusetts during the nine years and eight months ending with 1850, and in New York during the years 1847 and 1848.

CLASSES OF OCCUPATIONS.	MASSACHUSETTS.		NEW YORK.		MASS. & N. YORK.	
	Deaths.	Av. age.	Deaths.	Av. age.	Deaths.	Av. age.
I. Farmers, &c.	7196	64.58	5180	55.41	12376	60.8
II. Labourers, &c.	3428	45.44	1324	39.96	4752	43.7
III. Active out of door mechanics	1701	50.39	208	48.7	1909	50.21
IV. Other active persons in open air	330	44.23	48	43.43	378	44.13
V. Active mechanics, &c., in shops	2086	45.22	248	46.29	2334	45.36
VI. Sedentary mechanics, &c., in shops	1980	37.7	203	42.48	2183	38.3
VII. Seamen	1717	42.48	54	40.9	1771	42.42
VIII. Merchants, financiers, &c.	1626	45.58	362	39.88	1988	44.53
IX. Professional men, &c.	650	56.32	427	38.24	1077	49.26
X. Mechanics, trades not specified	216	43.66	838	45.1	1084	44.8

Here is exhibited a great difference of longevity of men in the various classes of employment, and this is generally in favour of those who lead a life of action in the open air. The cultivators of the earth enjoyed the longest, and the sedentary mechanics, in warm shops, the shortest life. There is an observable distinction, in this respect, between the carpenters, masons, &c., mechanics whose occupation is laborious and abroad, and tailors, shoemakers, &c., whose employment is very quiet and under constant shelter. Assuming the lowest as the standard, the point of comparison, the table shows that while the sedentary mechanics lived 100 years, the seamen lived 110, the labourers 113; the fourth class, butchers, drovers, stevedores, &c., lived 114; the merchants, &c., 115; the mechanics whose trades were not stated 116; the active in-door mechanics 117; professional men 127; active out-of-door mechanics 130; and farmers and gardeners 157 years.

Some part of this difference may be due to the difference of manner and times in which men enter and go out of some of these employments. In several of those included in the fourth class young men are mostly employed; many of these, after some years, go into other occupations, and there remain, and die at an older age. Yet, after making all proper allowance for these and other disturbing elements, there still remain remarkable differences of longevity, which are connected with, and seem to belong to, these several classes of occupations.

The facts stated in these reports are not sufficient to establish the deductions which have here been drawn from them as universal principles, nor even to demonstrate the extent to which they are applicable. But they are sufficient to demand farther investigation in the same field. It is, therefore, hoped that Massachusetts will continue to make her annual reports, that New York will revive the work which she has suspended, that Pennsylvania will carry into complete execution the law of registration which she has established, and that the other States will establish and execute similar laws for the registration and report of the births, marriages, and deaths, within their respective limits.

These laws and reports will give to the world very many important facts, in respect to life and mortality. They will enable us to take the first step toward ascertaining the sanitary and morbid influences of seasons, atmospheric conditions and localities, of employments, social conditions, circumstances, and habits of the people. They will open the way to the discovery of the causes of disease, and probably to the means and methods by which they may be modified, ameliorated, and perhaps extinguished.

E. J.

BIBLIOGRAPHICAL NOTICES.

ART. XVI.—*A Treatise on the Diseases of the Chest: being a Course of Lectures delivered at the New York Hospital.* By JOHN A. SWETT, M. D. New York, 1852: 8vo. pp. 585.

THE lectures contained in this volume were published in the *New York Lancet* about ten years ago, but they now include much new matter derived from a register of the author's public and private practice since that period. Dr. Swett is well known as one of the first who introduced into New York the methods of physical exploration which he had learned in the schools of Paris; he has continued to maintain a high character for skill and accuracy in the diagnosis of thoracic diseases, and enjoyed opportunities surpassed by none other for perfecting himself in this department of medicine. Such vouchers for capacity and knowledge in the author inspire a degree of confidence in his work which a study of it will not diminish.

The lectures treat in a concise manner of physical examination of the lungs and heart, and very fully of the acute and chronic affections of these organs. The great number of works that have been lately published upon the same subjects, and noticed in this journal, forbid our entering into a detailed analysis of the one before us, especially as the lectures do not claim a very recent origin, nor profess to institute a scientific inquiry which would call for a discussion of the principles and statements of authors, so much as to present in a clear and succinct manner what the author regards as established truths. Had he now to prepare a work upon the same subjects, he would, we apprehend, find reason to modify several of the doctrines, and to enlarge many of the statements contained in the one before us. Attention will be drawn to some of these points in the course of the present notice.

In explaining the mechanism of the dry rhonchi, the author says "the bronchi are rendered irritable by the existing inflammation, and being muscular tubes, at least in the smaller branches, they contract spasmodically at certain points," producing sonorous or sibilant tones according to the size of the tubes. And again, in speaking of bronchitis with obstruction to the pulmonary circulation, he remarks that this obstruction "seems to impress a peculiar irritability on the bronchi, by which the tendency to spasmodic contraction is materially increased." (p. 57.) In another place, tartar emetic is said to operate usefully by counteracting "a tendency to spasm of the bronchi," (p. 62:) this condition is also stated to play "a most important part in the paroxysms of emphysema," (p. 195,) and we are told that "it is easy to conceive that a general spasm of the bronchi should induce" the dyspnoea of nervous asthma. (p. 201.) The author furnishes no proof whatever of the correctness of an explanation of the dry rhonchi which we had supposed abandoned long ago, as purely hypothetical, and we notice this fact the rather because he is, in general, quite free from the prevalent vice of travelling beyond the record of facts and the inductions which legitimately rest upon them.

The following explanation of œgophony is hardly admissible. "It seems to be produced by the vibrations from the bronchi being transmitted to the ear over the surface of the liquid effusion, like the ripple on the surface of a pool of water from a puff of wind." According to this theory, the cavity of the chest above the point at which œgophony is audible, must be occupied by air alone, which we know is not the case. There is no reason to doubt the correctness of the ordinary explanation, to wit: the existence of a thin stratum of fluid, between the lung and the ribs opposite the larger bronchial tubes, which is thrown into vibration by the voice. As the lung is thrust away from the

ribs by the accumulating effusion, the stratum grows too thick to assume the vibratory action, and oegophony ceases until the decrease of the fluid restores the same mechanical relations. The fact that pleurodynia is generally felt below and to the outside of the nipple, is well explained by the fact that at this point the movement of the ribs in respiration is greatest.

Allusion is made to the occasional value of the microscope as an aid in diagnosis. "A young lady with some suspicious chest symptoms expectorated suddenly several ounces of a dark-red or chocolate-coloured fluid. This was suspected to be blood, in part at least. But on examination by the microscope, not a single blood-disk could be discovered, but an immense number of epithelial scales from the mucous membrane of the bronchi, sufficient to give the fluid its reddish colour."

In the opinion of our author, chronic bronchitis is not much under the influence of remedies, at least in a variable climate like ours, and he, therefore, relies more upon removal to a more genial climate when this is attainable. As a substitute for this means he speaks favourably of the respirator, or wire-gauze screen, which becomes warmed by the breath, and saves the lungs from the direct contact of cold air. The invigoration of the digestive powers he justly esteems to be an important element of the cure, and therefore counsels a sparing resort to the medicines recommended for this disease, and which very generally impair the digestive function. In whooping-cough, Dr. S. is of opinion that belladonna is, at best, a palliative: he does not believe that it shortens the duration of the disease. Other observers have been more fortunate in its use.

The chapter on Pneumonia is a very complete picture of this prevalent and interesting disease. The author does not think that the difference between inflammatory congestion and simple stasis of blood in the lungs can be defined, and he rejects the ordinary test that in inflammation the tissues are softened, but are not so in congestion. If this solution be not applicable in every case, it certainly is so in the greater number, and is, indeed, the only one that can be appealed to. Gangrene of the lungs he is inclined to attribute to a loss of nutrition from obliteration of the arteries, and very seldom to inflammation. The former supposition is destitute as yet of any material support, while the latter is proved as regards a certain number of cases, and is, therefore, an allowable hypothesis for many more. Yet the inflammation in these cases is not sthenic and marked by the usual excess of fibrine in the blood. It would appear to be subordinated to a depressed state of the system, one incapable of setting up a true inflammatory process. Speaking of the influence of cold in the production of pneumonia, the author calls attention to the prolonged action of the cause as an important element. A momentary or brief exposure to even a very low temperature is far less injurious than the continued operation of this agency, especially in conjunction with dampness. A striking fact illustrating the influence of position in determining the seat of inflammation, is derived from observations made at the *Maternité* in Paris. The nurses of this institution place the children on the right side, and carry them on the left arm. "It was observed that nearly all the attacks of pneumonia were in the right lung. Care being taken to reverse the position of the children, the frequency of the disease did not diminish, but its seat was changed to the left lung." The author dwells on a very important fact, the tendency of females to exhibit a degree of delirium during the active stage of pneumonia very much out of proportion to the real gravity of the local affection. The fact we say is important, because it has doubtless led to an undue amount of bloodletting in many cases, singularly ill-prepared to bear the loss. Cold to the head, opiates, and nerve stimulants afford speedy relief. The salutary influence of bleeding in sthenic pneumonia, as well in mitigating the patient's suffering as in shortening the attack, are illustrated by the valuable results contained in Grisolle's treatise, which Dr. Swett abundantly confirms. He is also more persuaded of the good influence of tartar emetic than of mercury in this disease.

The subject of pleurisy is well handled. The author dwells particularly on the insidious character of the subacute form which sometimes reaches the stage of full effusion without seriously attracting the attention. In such cases, there is reason to suspect tubercles as the exciting cause. Several examples

are given in proof of this opinion. Dr. Swett, in speaking of pleurisy in young children, is unable to explain the fact that bronchial respiration should sometimes be heard over the whole lung, even when the effusion is very large. He suggests that "in children the respiratory function is very active, and probably the lung is less compressible than in the adult." The reason does not appear to us very obscure. The walls of the chest being very extensible in children, they yield before the effusion, and allow the lung to retain more nearly its natural volume.

The author thinks that the operation of paracentesis should be resorted to in chronic pleurisy after proper remedies have been tried in vain, and before the vital powers are much exhausted. He lays down the following conditions for the operation: 1. When the side is much dilated, the intercostal spaces bulging and fluctuating, or when pointing has occurred. 2. When none of the above conditions exist, except that the effusion is undiminished by treatment. 3. When the effusion, having been partially absorbed, remains stationary. He, further, does not regard the probability that an abscess is forming in the lung, nor that the patient is tuberculous, as positive contraindications, if other circumstances render the operation proper. About two-thirds of the cases which fell under his observation terminated successfully, the proportion being greater among children than among adults.

Speaking of the treatment of croup, the author remarks that "so unavailing have been the efforts of some of our best practitioners to cure genuine croup by antiphlogistic remedies, or by a perturbing treatment, consisting in the frequent administration of emetics in conjunction with antiphlogistic remedies, that some have thought best to abandon this mode of treatment and to leave the case pretty much to the efforts of nature." We should hope that so illogical and uncharitable a conclusion were adopted only by very exceptional practitioners. To accept it would argue a strange degree of ignorance of the actual results of treatment in pseudo-membranous laryngitis. Even the mere sponging of the larynx with a strong solution of nitrate of silver were preferable to such a "meditation upon death." Of the method just alluded to, there is, to use our author's language, "reason to hope, and some reason to believe" that it "may be attended with benefit, especially in cases in which the inflammatory action has originally been inconsiderable, or has been subdued by other means." In reference to the success of tracheotomy in this disease, the author makes a just distinction of cases. Thus, where the asphyxia comes on through the gradual closure of the air-passages, and the constitution loses at every step of the attack a portion of its resisting power, tracheotomy offers a far slighter chance of life than when the attack of suffocation rapidly attains its crisis. If it be well settled that the operation itself does not involve life, the sooner it is performed the better, provided the disease proceeds from above downwards, or is confined to the larynx and trachea. But unhappily these conditions can only be conjectured to exist.

The chapter on Laryngitis is copious and instructive. Speaking of the chronic varieties of the disease, the author expresses the opinion that most cases of chronic laryngitis occur in connection with the scrofulous constitution, and are aggravated by an impaired state of the general health, dyspepsia, mental anxiety, and fatigue. "It is common to hear," he remarks, "of the inflammation spreading from the fauces to the larynx, and so downward to the bronchi, and finally to the lungs, inducing disease of the lungs. The real truth is, I think, that, in the majority of instances, the lungs were first affected, and that the disease has spread upward to the larynx and to the fauces." . . . "The influence of dyspepsia, with an impaired state of the general health, in continuing, if not in causing the slighter forms of laryngeal disease, is very striking. Yet many of these cases are by no means attended by important organic changes in the larynx. I am inclined to think that weakness and relaxation of the parts more directly concerned in the production of the voice, is often the chief difficulty, and will explain the hoarseness and the sense of exhaustion that frequently follow the exercise of the voice in clergymen; and that the good effects of stimulating applications to the parts, combined with rest, is quite as much owing to their increasing the nervous energy, as in

removing any traces of inflammation that may be supposed to exist." But, in some cases, chronic laryngitis succeeds an acute attack of inflammation which has been imperfectly cured, and presents tenderness, and a sense of heat and constriction in the larynx, dysphagia, hoarseness, slight sibilant respiration, with a laryngeal cough, as its principal symptoms. It is in such cases particularly that a solution of nitrate of silver "applied to the interior of the larynx by means of the whalebone and sponge, as first recommended by Trouseau and Belloq, may be permanently useful." But the most common and important form of chronic laryngeal inflammation is that alluded to in the beginning of this paragraph. It is so well characterized by the author that we quote his remarks, and commend them to those who have been misled by representations which seem to have been put into currency from other motives than a love of truth.

"A second class of cases, far more numerous, and in part at least dependent on a constitutional cause, the *scrofulous diathesis*, are much more insidious in their development, and much more difficult of cure. The subjects of this form of this disease are pale and delicate persons, who inherit a feeble constitution. If a careful inquiry be made, it will frequently be noticed that such persons have, for a long time, before any distinct laryngeal disease has manifested itself, been subject to an irritation of the throat, indicated by a more or less frequent desire to clear it of mucus, and a tendency to slight hoarseness and weakness in the chest, after singing, or other exercise of the voice. In clergymen particularly, in whom this form of disease is very frequent, you will see the best type of its development. An examination of the throat discovers the parts somewhat congested, the tonsils slightly enlarged, the posterior fauces presenting red elevated patches of thickened mucous membrane, with increased mucous secretion. Yet, with these evidences of chronic inflammation, the parts are relaxed, the vessels are large and often arborescent, the uvula swollen, cedematous, and flabby, and capable of being drawn out to twice its natural length by moderate traction with the forceps. The degree of hoarseness presents every possible variety, while the sibilant respiration is rarely met with. The pain in swallowing, as well as the tenderness over the larynx, is seldom marked. The sensation in the larynx is like the aching from fatigue. Such cases are often much relieved by rest, by local applications, like the nitrate of silver; but they are very apt to return again, especially under the influence of unfavourable exciting causes, as undue exercise of the voice, fatigue, anxiety, and other depressing influences. This form of the disease cannot properly be separated from the constitution that is almost uniformly found to attend it, and the chances of permanent benefit are intimately connected with constitutional remedies which improve and invigorate the general health, such as a sea-voyage, travelling, freedom from fatiguing and anxious occupation, and the use of a general tonic course. Such patients are often encouraged by even a slight improvement in their condition. They even think that they are almost or quite cured, until a relapse teaches them that a perfect recovery is not so easily attained.

"In these cases, you may discover no pulmonary disease. There may even be no cough, but only a hawking from the throat of mucus, although cough also is frequently present. Yet if, in time, the lungs do become implicated, which is very probable, and cavities form in them, then the laryngeal symptoms become aggravated by the supervention of ulceration. This is not, however, always the case, for the laryngeal disease, even if ulceration be present, may be masked to a certain extent by the pulmonary complication. Besides, much will depend upon the seat of the ulcerations. Those which attack the epiglottis give the most trouble, from the dysphagia they induce, while, if the vocal chords are attacked, the hoarseness may be much and permanently increased."

A case of simple aphonia, occurring in a person of a nervous temperament, was successfully treated by the author with strychnia.

The coexistence of emphysema of the lungs and tubercles renders detection of the latter difficult. The author would rely upon the rational symptoms, such as progressive emaciation, acceleration of the pulse, hectic fever, and hemoptysis, to form an opinion; if, in addition to these, the respiration is simply feeble at the summit of the lung, but with increased vocal resonance, the existence of

tubercles is probable. A common source of error is thus described and provided against: "A young person, perhaps, of rather delicate constitution, notices habitually a slight degree of dyspnoea, and a trifling cough. The chest is examined, and a slight degree of dullness on percussion is detected beneath one of the clavicles. This may lead to a suspicion of tubercles. But this dullness is apparent, not real. It exists by comparison only, because a slight degree of emphysema in the opposite lung has increased somewhat the natural resonance on percussion. If, in this case, a slight fulness of the walls of the chest should happen to exist about the clavicle where the emphysema is seated, then the opposite space might not only sound dull, but seem depressed; and thus a new suspicion of tubercles might arise. But where the apparent dullness and depression exist, the respiratory murmur is *distinct and natural*. On the emphysematous side it is feeble."

As in other works on diseases of the chest, consumption occupies a large space in the one before us; it holds a mournful pre-eminence among the ills which flesh inherits, and one which the author does not think likely to be lost even by the apparently flattering success of the new means directed against it. In considering the influence of climate as originating and developing this disease, he lays a good deal of stress upon the mortality produced by it among the soldiers of the British and American armies, inferring that a warm climate is more favourable to its production than a cold one. We think that, as all of the statistics relate to persons, natives of a cold climate, who have been transferred to a warmer latitude, the results afford no criterion for judging of the influence of temperature as a cause of phthisis. Unquestionably this disease is of less frequent occurrence in warm than in the so-called temperate climates. The question, then, whether a person inclined to consumption would profit by resorting to a tropical climate can only be answered by the fruits of direct observation, by ascertaining how far such a change of residence has actually benefited those who have sought by its means to ward off a threatened attack, or to stay the progress of the already developed disease. Accurate data are wanting to solve this question.

It is often asserted that the use of ardent spirits tends to prevent the development of phthisis. The following fact bears upon this question. Two medical gentlemen, the author states, who are attached to the public Dead House, of New York, in which bodies are deposited which are found in the streets, or without friends, discovered, in about seventy *post-mortem* examinations of those who had died of the most confirmed and aggravated intemperance, not a single case of tuberculous lungs. Perhaps it may be objected, persons of a delicate constitution, and who are predisposed to phthisis, have less tendency than the robust towards those associations and habits which induce intemperance, and that they also feel less craving for artificial stimulus. However this may be, the fact adduced by Dr. Swett conforms to general experience, for consumption has no place in the swollen catalogue of mischiefs attributed by medical writers on intemperance to this destructive vice.

The author is of opinion that hemorrhage from the lungs does not act unfavourably on the general progress of consumption. On the contrary, he believes that it rather promises a long course to the disease, particularly if it assume the passive form. The most protracted case of phthisis he ever knew, and which lasted thirty-five years, was marked by occasional returns of, sometimes, very copious hemorrhage. These views correspond with those expressed by Dr. Walshe.

A very important principle is involved in the caution which the author gives against inferring the existence of actual phthisis from signs of solidification at the summit of the lung. When a cure of tubercle in this situation takes place the pulmonary tissue is left condensed, and will therefore furnish the same physical signs as if a mass of tubercle were situated there; there may even be signs of a cavity remaining after the thorough removal of tubercle from the lung. Hence the respiration may be feeble, harsh, jerking, bronchial even, and the percussion decidedly dull, without any tubercle to produce these sounds. The whole history of the patient, and his general symptoms form in such cases an essential and indispensable element of the diagnosis.

To the question, is consumption curable? Dr. Swett returns an affirmative answer. Not, however, in many cases of strongly-marked phthisis, although instances of marvellous recovery do occasionally take place. In illustration of the latter statement the history of a patient is related, who, to all appearance, was so far gone in consumption, with a large and well-marked abscess under the clavicle, that he was daily expected to die. Yet in the course of two months afterwards he had grown so stout as hardly to be recognized. The author states that during the last fifteen years he has known a number of patients who attained the enjoyment of good though not perfect health, after having had evidences of phthisis, and sometimes in an advanced stage. During the same period he has been struck with the number of cases in which patients, dying of other diseases, have presented traces of phthisis that had been cured; and, on the whole, concludes that the common expression, "the patient could not have had phthisis because he recovered," will cease to be believed. As to the means which are fitted to secure, or at least promote, the cure of consumption, he furnishes nothing new. The influences of relaxation, food, climate, &c., are in his opinion the capital ones, and not at all to be subordinated to the various specifics which from time to time have been vaunted. Even cod-liver oil is destined, in his opinion, to share the same fate as antimony, digitalis, iodine, &c. "It has not," he asserts, "any specific influence in phthisis. It has not, in my experience, performed any wonderful cures. I do not, however, mean to deny its usefulness in this disease. It certainly sometimes appears to diminish the emaciation, to improve the appetite. It is good nourishment, nothing more; and I think it probable that other kinds of oil, equally well prepared, may exert the same beneficial influence." This judgment will hardly stand against the recorded *proofs* of the efficacy of cod-liver oil. We speak not of assertions merely, which cost nothing to make as positive as may be required, but of evidence which, whether we consider the character of the witnesses for skill and probity, their number, their agreement, or the material proofs of their statements, presents a demonstration which scepticism only could resist. Doubtless the truth is exaggerated; doubtless, also, direct falsehood has been published, but enough solid and incontrovertible truth remains to establish for cod-liver oil a power over consumption possessed by no other agent whatever.

The author condemns emphatically and with great justice the practice of employing medicines in consumption which do not compensate by their usefulness for the mischief which they do to the digestive function. In this category may be included digitalis, venesection, and the whole catalogue of expectorants. Anything of this description, beyond what is requisite for palliating the cough, is injurious by impairing digestion; even opium, that precious drug, should be used with an avaricious hand, and carefully proportioned to the actual needs of the patient. Of issues on the chest and other permanent forms of counter-irritation, the opinion of the author is that they are useless with respect to the primary disease, but may relieve the secondary inflammations which sometimes accompany it. He thinks, also, that liniments, applications containing oil and plasters, are objectionable as tending to interrupt the cutaneous exhalation. This is evidently a theoretical objection to the applications mentioned, and we have, on the other hand, the practical fact that the cough and sputa are diminished, and the comfort of the patient increased by them. The best application to the chest is, in the author's opinion, water either cold or warm, according to the strength of the patient. We think that much caution is necessary here. Consumptive patients are exceedingly chilly, and may have the thoracic symptoms aggravated by water applied almost at the temperature of the body. The evaporation of the fluid, during the moment it remains upon the skin, is sometimes sufficient to produce this effect. Dry friction with a coarse towel is a safer and a very efficient stimulant, and a revulsive which may be used where water is inadmissible. The respirator, or screen of wire gauze, intended to moderate the action of cold air upon the lungs, is here again favourably spoken of by the author. It is an excellent invention, for it enables patients to breathe the fresh air and take the exercise so essential to maintaining their vigour during the long and severe winters of our climate.

The chapter on *Cancer in the Lungs* is, perhaps, the most complete in the

work before us. It appears to have been based upon an analysis of original and selected cases of the disease. After a clear and succinct account of the general anatomy of cancer, the author states that encephaloid is the most common variety affecting the lungs. Thus, of twenty cases, sixteen belonged to this form, three of encephaloid and scirrhus united, and one of scirrhus and colloid.

One of these tumours, described by Dr. S., weighed eleven and a half pounds. Five times in twenty the tumour originated in the posterior, and once in the anterior mediastinum. In twenty cases the amount of deposit was sufficient to have produced physical signs of disease, ten times over the right and six times over the left lung. The disease may terminate fatally in two months after the first development of its symptoms; it may continue for four years; its mean duration being between thirteen and fourteen months. The age of the patients in the cases furnishing this summary varied between twenty-three and seventy-two years, and five of them only were females.

The author divides cases of cancer of the chest into two classes, those in which the disease originates in the lung, and those in which the mediastinum is its original and principal seat. The symptoms of the latter are chiefly such as are due to pressure. Neither form has characteristic symptoms, none, at least, until an advanced stage of the disease; and then, besides the general phenomena of consumption, oedema of the face and extremities, enlargement of the superficial veins of the trunk, and the characteristic straw colour of the skin, give certainty to the diagnosis. The affected side of the chest is generally *contracted*. Neuralgia of the thoracic and brachial nerves is met with in some cases. Dr. Swett does not regard the straw colour of the skin as diagnostic of cancer, but merely as denoting anemia; for, in his analysis of cases, this symptom appears to be connected with hemoptysis; and he remarks, further, that this complexion is quite as characteristic of fibrous tumours of the uterus with hemorrhage, as it is of any form of cancer. The differential diagnosis of cancer of the lung will best be understood by the following extracts:—

“The diseases with which cancer of the lung is most apt to be confounded, are tuberculous phthisis, empyema, and aneurism of the thoracic aorta. In phthisis, the disease often commences with nearly the same symptoms, and progresses in a similar manner; and even the physical signs, as in one of the cases that occurred to myself, may be quite analogous. Yet in most cases of cancer, there are some anomalous symptoms which are not met with in phthisis. Thus, in the case to which I have alluded, there was severe neuralgic pain extending down the arm, which at once made me doubt the existence of phthisis. The pulse was also quite natural in frequency, which could certainly not be expected in a case of phthisis so far advanced, and there was no hectic. The absence of hectic symptoms and a tranquil pulse seem to be rather striking characteristics of cancer before the period of softening; a condition which, probably, does not often occur until a late period of the disease. A leading fact in the history of tuberculous disease is the great uniformity of its seat at the summit of the lung, and its tendency to pass to the formation of cavities. Neither of these facts is true in cancer. Again, tuberculous disease in its progress most frequently affects both lungs so as to be recognized by the physical signs. This is not the case with cancer. The physical signs are seldom detected in more than one lung. Again, the symptoms induced by pressure upon the veins are not observed in phthisis, as they, not unfrequently, are in cancer of the lung. Oedema of the upper regions of the body, enlargement of the superficial veins, are not likely to occur in phthisis. Cancerous tumours, when developed in other organs so as to be felt externally, are usually larger than those of a tuberculous nature. In empyema, the affected side of the chest is usually dilated; there is always extensive dullness on percussion, and absence of respiratory murmur, unless at the apex and at the root of the lung. In cancer of the mediastinum, precisely the same physical signs may exist, and in both diseases you may notice an oedema of the upper portions of the body and enlargement of the superficial veins. In the remarkable case of mediastinal tumour that I have stated to you, the only physical sign that might have led to the suspicion that the disease was not a collection of fluid in the chest was, that the dullness, although universal, was yet most marked under the clavicle

of the affected side. This would not readily happen in empyema: the sub-clavicular portion would, probably, sound clearer on percussion than other portions of the affected side.

"In cancer of the substance of the lung, the affected side is usually contracted and very dull, and a bronchial respiration is heard over it. This character of the percussion and of the auscultation is sometimes met with in empyema, but it is rare. You may remember a case to which I alluded when speaking of empyema, in which a bronchial respiration existed all over the affected lung, with universal dullness on percussion; and which was found, after death, to be empyema with ancient adhesion of the lung to the diaphragm. But in this case the side was dilated, which would not have happened, probably, in cancer of the lung; although in empyema the side is not necessarily dilated. I have seen it contracted, even with a considerable effusion of pus in the chest.

"Cancer of the lung may be confounded with aneurism of the aorta, or with valvular disease of the heart. If a cancerous mass, too small to produce any external tumour, is infiltrated around the origin of the great vessels of the heart and compresses them, the physical conditions of a permanent organic bellows murmur are produced. How could you distinguish this case from valvular disease of the heart? Not by the sign I have mentioned. But, perhaps, other circumstances might exist. The heart is not enlarged, perhaps, as it would probably be in valvular disease. So in the attempt to diagnose a tumour caused by a cancerous mass from an aneurism of the thoracic aorta. How could you do this? Both diseases are tumours, compressing, irritating the organs in the chest. But an aneurism of the aorta has certain favourite seats in the chest, in front, about the right third rib, at the top of the sternum, above the clavicle. These are not the favourite seats of cancerous tumours. Again, a bellows murmur remote from the heart, a thrill, and when it presents externally, an expansive pulsation, belong to aneurism, rather than to a cancerous tumour. Finally, in all suspicious cases, be careful and examine other portions of the body—the abdomen, the subcutaneous organs, and, perhaps, you may discover a tumour, or many tumours, which will aid you materially in the diagnosis."

In the division of the work relating to diseases of the heart, the author devotes two lectures to an account of the action of the organ, and the signs furnished by it in disease. He follows very nearly the exposition of these which was taught by Hope, and does not appear to have paid much attention to the nicer distinctions which recent observation has established. The impulse of the heart is ascribed exclusively to the systole of the ventricles; but, as usual, the phenomena of the particular cases refute this theory. Thus it is stated that, according to Dr. Taylor, the friction sound, when double, is most distinct with the ventricular *diastole*, and that when single it usually accompanies the diastole; a state of things wholly irreconcilable with the theory of the impulse being caused by the systole of the ventricle. Again (p. 502), a case is related in which there were two hundred and eight pulsations of the heart per minute, for ninety-six of the radial artery, which would be impossible, except on the supposition that the former pulsations occurred during the diastole of the ventricle, or on that of the vessels being almost empty of blood. But here the latter cause did not exist.

The lectures on *Pericarditis* and *Endocarditis* present a full and clear history of these affections; but the limits of this notice forbid our entering into particulars. Some remarks on the treatment of the former disease, however, deserve notice. Every one must have remarked the extremely slow progress of absorption in some cases of pericardial effusion. This sometimes appears to depend upon the patient's feeble constitution, or upon the adoption of too active a treatment at the commencement of the attack of rheumatism, or whatever affection gave rise to the pericarditis. In these cases the author calls attention to the necessity of abandoning all antiphlogistic remedies, and resorting at once to a nutritious diet, with tonics, such as the compounds of iodine and iron, and securing rest by opiates. There are mixed cases, too, in which a tonic treatment should be added to a cautious mercurial course; and

chronic cases, which demand iodine and mercury, along with diuretics and blisters. In endocardial inflammation, or what passes for such in the course of acute articular rheumatism, the author adopts the strenuous advice of Dr. Latham, to commence the mercurial treatment early in the disease, and to pursue it actively, and he adds that his own experience confirms the observations of the eminent author of this suggestion.

Under the head of *Enlargement of the Heart*, Dr. Swett unites the consideration of hypertrophy and dilatation, because, as he remarks, these two conditions are generally united. In an elementary work, it would have been more intelligible to treat of them separately. The reader would then have formed a clearer notion of what symptoms are due to each element of the combined disease which is most frequently met with in practice. The account of them is, for the most part, clear and consistent. The chapter on valvular disease presents a very faithful history of the symptoms and lesions of this class of affections, though we think that an occasional error is committed by explaining the phenomena according to the prevalent theory; and that numerous points are passed more lightly over than they would have been in a course of lectures written at the present time. The progress of the last ten years has completed or rectified many doctrines. Such, for instance, is that of cyanosis, which Dr. Swett explains by the now untenable theory of the admixture of the venous with the arterial blood.

Functional disturbances of the heart are described, as well as the causes which produce them by debilitating the nervous system. Several interesting cases in which the affection arose from venereal excesses are related, and some which belong rather to the category of angina pectoris. Inflammation, induration, softening, fatness, rupture, atrophy, displacements, malformations, and polypi of the heart, are briefly but clearly discussed; the last subject particularly is dwelt upon as an accidental cause of death which it is hardly possible to foresee or to provide against. In the two concluding lectures the author presents a history of aneurism of the heart and great vessels, which contains all that is essential to an understanding of the subject, and is illustrated by several interesting cases. In one of these the rupture of the aneurism took place in the spinal canal, inducing sudden paraplegia; in another, an aneurism of one of the coronary arteries, about the size of a pigeon's egg, had ruptured into the pericardial sac. The case was that of a young lady who had just been dressing herself for a ball. In descending the stairs, from her chamber, she died suddenly. The following statistics of aneurism are interesting:—

"In 40 cases of aneurism of the ascending aorta, 19 were ruptured; 16 were of the false variety; one an aneurism by dilatation; and in two cases their character was doubtful. Of these—7 ruptured the pericardium; 2 the right ventricle; 2 the right auricle; 2 the vena cava superior; 1 the pulmonary artery; 1 the œsophagus; 2 the right pleura; 1 the left pleura; 1 the right lung.

"In 31 cases of aneurism of the arch, 20 were ruptured. Of these—16 were cases of the false aneurism; 3 of the aneurism by dilatation; in one case the character was doubtful. Of these—6 ruptured the trachea; 3 the œsophagus; 3 the left pleura; 3 the pericardium; 1 the left bronchus; 1 the left lung; 1 the pulmonary artery; 1 the posterior mediastinum; 1 externally.

"In 16 cases of aneurism of the descending thoracic aorta, there were 20 ruptures; 15 were the false aneurism; 1 of the aneurism by dilatation. Of these—5 were ruptures of the left pleura; 3 of the left bronchus; 3 of the œsophagus; 2 of the left lung; 2 of the trachea; 2 of the right lung; 2 of the posterior mediastinum; 1 of the pericardium."

When describing aneurism of the *arteria innominata*, the author alludes to what he styles "the bold and brilliant operation of Dr. Mott, for the cure of this aneurism," a strange epithet, as it strikes us, when applied by a pathologist of Dr. Swett's attainments.

In conclusion, mention is made of stricture of the aorta which the author regards in the light of a pathological curiosity. He refers only to two cases, of which one occurred to Mr. Nixon, of Dublin, and the other to Dr. Clark, of New York. In both cases, aneurism was supposed to exist. The most complete

account of this subject is contained in the *Inaugural Thesis* of Dr. Barth, of Paris, published in 1837, and is founded on an analysis of twenty-four cases, of which one was original. The diagnostic symptoms are chiefly the following: coldness, weakness, and numbness of the lower limbs, without pain in the spine or symptoms of apoplexy, and then the appearance of ecchymosis on the extremities. If these signs, or some of them, fail, there may still be observed strong pulsations of the arteries of the upper part of the body, and comparatively feeble ones of those supplying the lower limbs, unwonted force of the intercostal arteries, and sometimes a difference like that just noticed in the pulsations of the aorta itself above and below the point of stricture. In Dr. Clark's case, as in others, a loud sawing sound was heard beyond the seat of the disease, but on the cardiac side of it not at all.

The foregoing are the principal points in the work before us which seemed to call for criticism, or which make some addition to the knowledge which was already possessed concerning thoracic diseases. The work of Dr. Swett, taken as a whole, will be found useful by the learner, to whom it seems particularly addressed, because it presents its subject in a plain, intelligible, and accurate manner. The practitioner will value the illustrations drawn from the author's personal experience, and appreciate the simplicity and good sense which mark its precepts.

A. S.

ART. XVII.—*Reports of American Institutions for the Insane.*

1. *Of the New York State Lunatic Asylum*, for 1849 and 1850.
2. *Of the New York City Asylum (Blackwell's Island)*, for 1849 and 1850.
3. *Of the New Jersey State Asylum*, for 1849 and 1850.
4. *Of the Pennsylvania Hospital for the Insane*, for 1849 and 1850.
5. *Of the Frankford Asylum*, for 1848, 1849, and 1850.
6. *Of the Maryland Hospital*, for 1846, 1847, 1848, 1849, and 1850.

1. DR. BRIGHAM, the late distinguished superintendent of the New York State Asylum, died in the summer of 1849, and his place, during the remainder of the year, was filled by his principal assistant, Dr. George Cook, by whom the report before us was written.

	Men.	Women.	Total.
Patients at the beginning of the year	241	254	495
Admitted in the course of the year	192	170	362
Whole number	433	424	857
Discharged	207	201	408
Remaining at the end of the year	226	223	449
Of those discharged there were cured	113	90	203
Died	35	34	69

"During the past summer," says the report, "while the epidemic cholera pervaded a large portion of our country, we, through the kindness of an over-ruling Providence, were spared from its ravages; and, with the exception of some cases of dysentery, in the months of August and September, the general health of our patients was good. But in the month of December last (1848), the asylum was visited by the smallpox, which continued to prevail amongst us for several weeks, and in a number of cases proved fatal. No person who came here had the disease at the time of admission, or, as far as we could learn, had come from a section of the country where it was prevalent. It made its appearance in the female division of the asylum, and the first case occurred in a patient who had been here about seven months." The first, second, third, and fourth cases were very mild; the fifth, in a patient who had been at the asylum several months, confluent and severe. When attacked, the patients were removed to the infirmary.

"Of four hundred and ninety patients who were in the house at the time, and who were more or less exposed, forty-eight took the disease; viz., twelve

men and thirty-six women. Thirty-three had it in a mild form; of these, six were men and twenty-seven women. Fifteen had the confluent form, of whom six were men and nine women. Fourteen died in the course of the disease, or soon after its termination; viz., five men and nine women, of whom eleven died of the disease, and, in the other three, death was only perhaps a little hastened by it." Besides the above, eight attendants had the disease, two of whom died.

The remaining fifty-five deaths were caused as follows: Dysentery 14, meningitis 7, consumption 6, exhaustion following excitement 5, general paralysis 4, epilepsy 3, marasmus 2, diarrhoea 2, pneumonitis 2, ascites 1, hydrothorax 1, suicide 1, puerperal fever 1, "disease of spinal cord" 1, erysipelas 1, apoplexy 1, "serous diarrhoea" 1, old age 1, "peritoneal inflammation from perforation of the intestines" 1.

The general system of moral treatment introduced by Dr. Brigham is still pursued. The tailor's shop appears to be no unimportant item in this system, as the report contains a list of no less than *four thousand six hundred and four* garments and articles of household furniture made in it during the year.

The officers of this institution have, for several years, taken particular pains to ascertain the number of suicides that occur within the State of New York. They think that "nearly all" are included in their tables, the totals of which are—for 1845, *seventy-four*; 1846, *sixty-four*; 1847, *one hundred and six*; 1848, *eighty-eight*; and for 1849, *sixty-two*.

The report for 1850 is the first issued by Dr. N. D. Benedict, the successor of Dr. Brigham. It is elaborate, and ably written.

	Men.	Women.	Total.
Patients at the beginning of the year	226	223	449
Admitted in the course of the year	185	182	367
Whole number	411	405	816
Discharged	209	178	387
Remaining at the end of the year	202	227	429
Of those discharged, there were cured	94	77	171
Died	34	17	51

Causes of death.—Chronic mania 12, acute mania 2, dysentery 13, general paralysis 3, erysipelas 4, pleuritis 2, phthisis pulmonalis 2, diarrhoea 2, operation for strangulated hernia, acute gastritis, typhus fever, acute dementia, aneurism of aorta, phagedæna, ascites, metro-peritonitis, strangulation, suicide, 1 each.

Of the deaths from chronic mania the report says: "These cases presented no evidences of organic disease; no inflammation, or results of inflammation, in any tissue or organ. For months before their dissolution the capillary circulation became extremely feeble, the secretions imperfect, the elaboration and appropriation of food defective, and consequent emaciation ensued. The whole train of morbid phenomena being referable to insanity, it seems proper to report them as dying of mania rather than of marasmus." We suspect, however, that such cases are, in most asylums, reported as deaths from marasmus.

"Thirteen died of dysentery, though it was at no time epidemic in the institution. We include, under this head, a form of disease very unlike dysentery of private practice and of general hospitals, but which we believe is very common in asylums, and which we do not recollect to have seen called by any other name. In occurs in chronic cases whose powers of life have long been gradually sinking, and, in recent cases, who have become much exhausted by protracted excitement. Without premonitory symptoms, or exposure to known exciting causes, the patient is suddenly seized, and generally in the night, with bloody discharges, scanty and gelatinous, or, more frequently, copious and serous, with no heat of skin or abdomen, nor pain or thirst, or loss of appetite or strength. Death supervenes a few days after the attack. We have perceived but little benefit from remedies in this form of disease, the treatment for ordinary dysentery proving entirely nugatory."

There were twenty-three cases of erysipelas in the course of the year, mostly

in the cold months, when the air of the halls was the most impure. "It is said of one of the New England hospitals, before infested with erysipelas, that, after the introduction of a system of forced ventilation, this formidable disease entirely disappeared."

One of the cures reported was that of a man who had been insane upwards of six years, had been several years in the asylum, and long considered as demented and incurable. "He would stand for hours in strange postures, apparently without thought or feeling. Gradually, he began to take notice of things around him, and to exercise. He resumed his trade, that of a tailor, and at length acquired his former dexterity and skill." This case furnishes another proof, not only of the importance of perseverance in the treatment of the insane, but also of the singularity of this wonderful and mysterious disease. By "perseverance in treatment" we mean the keeping of the chronic insane at institutions where the circumstances of their position furnish the greatest aid to a spontaneous or natural cure; for we presume that, in this case, *medical treatment* had long been abandoned. The case reminds us of one which once came under our observation. A lunatic had been under curative treatment until the hope of restoration was relinquished. He was pronounced incurable; a commission of lunacy was immediately appointed, his case legally investigated, and he was put under guardianship. *Within three weeks from that time he was perfectly well, and soon returned to his employment as clerk in a large mercantile establishment.*

In the treatment of acute mania, with violence, raving, and consequent exhaustion, Dr. B. employs seclusion, hot baths with cold applications to the head, and free evacuation of the bowels. "*In no case,*" says he, "*have we found local or general bleedings admissible; but, on the contrary, nutritious diet and brandy-punch are generally demanded.*"

The physician by force, in Molière's "*Médecin Malgré Lui*," speaks of the stomach as being situated upon the right side, and the liver upon the left. An interlocutor seems puzzled by this asserted position of the viscera, and mentions his impression that the stomach is on the left side and the liver on the right. Hereupon the physician by force acknowledges that, *formerly*, such was their position, but very sagely adds, "*nous autres médecins, nous avons changé tout cela.*" With much more truth may it be asserted, in regard to the treatment of acute mania, as recommended by Rush, and as generally practised in this country until within a comparatively few years, "*nous avons changé tout cela.*" This change has taken place, not at the Utica Asylum alone, but at all, or nearly all, the institutions for the insane in the United States.

"Of moral, or, perhaps more correctly, *immoral* insanity," says the report, "nine cases have been under our care, two of whom have been admitted within the last year. These cases present the various forms of derangement, from the mere rascally little sinner (two were lads) up to the most aggravated form of the genuine disease. We have an idea that a remedy, not much known to modern science, but in vogue in the days of Solomon, commenced early and faithfully persevered with, would have been eminently successful in preventing the development of the disease, or, at least, arrested its progress before its full establishment. One of our patients is the exact counterpart, if not the identical fellow seen by Mr. George Combe, in the Dublin Lunatic Asylum, who exhibits a total want of moral feeling and principle, yet possesses intelligence, ingenuity, and plausibility. He has been a scourge to his family from childhood; was sent to the army to get rid of him, from which he was turned out as an incorrigible villain, always fighting and getting drunk, for which he was repeatedly flogged. By seclusion, he becomes so savage as to render the task of entering his room and supplying his wants by no means enviable; and when at large he often assaults those around him. His chief employments are eating and fighting, and although he is constantly endeavouring to '*get out of these barracks,*' he seems to have no particular object in view but the more free indulgence of these propensities. In all but this one case, moral treatment alone has accomplished our object; but on him little moral influence can be exerted. By the aid of nauseating remedies and purgatives, frequently ad-

ministered, we are enabled, in some degree, to control him. Blisters and setons to the back of his neck are now being tried."

The physicians to insane hospitals generally acknowledge their tables of the "causes of insanity" to be comparatively valueless. That they are so, we have a striking proof in the report before us. Of the *two thousand three hundred and seventy-six* patients admitted previously to 1849, only *nineteen*, or *four-fifths of one per cent.* are reported as having originated from masturbation; while of *three hundred and sixty-seven*, received in the course of the year mentioned, *fifty-three*, or more than *fourteen per cent.* are attributed to that cause. Now, no reasonable man can believe that both of these statistical items can be true. Whence is the error? In the fact, undoubtedly, that they were reported, the former by one physician, and the latter by another;—by two men who, although they may have been equal in talent, learning, and skill, may have *favoured different theories*; or the one may have been somewhat more thorough in his investigations than the other.

"Frequently," writes Dr. B., "the patient himself can give the most satisfactory cause of his insanity, and often the very opposite to that attributed by his friends. This is especially true of masturbators, whose insanity is looked upon by friends as caused by 'religious anxiety,' because the first evidence of it noticed was an extraordinary anxiety about their salvation; an inordinate fear of future punishment; or abandoning all occupation but that of reading; or holding a Bible as if reading; or praying; or mumbling incoherent sentences, in an attitude of prayer, at improper times and places; or 'trying to tell his experience' in a religious meeting; or joining in and going to great lengths in the excitement of protracted religious meetings, or in such like acts. Another class, frequently placed under the head of 'religious anxiety,' are religious monomaniacs, whose insanity is undoubtedly referable to dyspepsia, habitual indigestion, and constipation, and the injudicious use of remedies for these diseases."

In the treatment of masturbation, "we rely mainly on mechanical restraint and aphrodisiac medicines. The combination we prefer is that of conium, camphor, and belladonna: and we think we have indubitable evidence of its power. We sometimes prescribe blisters and cold baths with advantage."

Although we have exceeded our usual limits in the notice of this report, we cannot leave it without laying before our readers the following extract:—

"Of the 816 patients in the institution, during the past year, the suicidal propensity existed in 66, 22 males and 44 females. There were 28—21 females and 7 males—in the house at one time. In 20 of these 21 females the propensity was intense. To have at one time under care twenty-eight persons bent upon destroying themselves, is a burden which they alone know who bear it, increased by the necessity of carrying, at all times, amid surrounding sadness, a cheerful countenance over a heavy heart. The successful attempt at self-destruction, before reported, was made on the 12th of July, by a female patient of our most intelligent class. Her melancholy end became known to her companions, with whom she was a favourite, and, on the following day, two other patients on the same hall were overheard devising a plan for their own death. About this time, the suicidal propensity prevailed extensively, and seemed to be epidemic. There were admitted, during the month of July, the large number of forty-four patients, from different portions of the State, *nineteen* of whom were suicidal. Several of these had attempted suicide immediately previous to admission. Two patients, *who had long been in the house, and never exhibited suicidal propensities*, attempted it during the month (on the 13th), *though they had no knowledge of the violent death that had occurred in another portion of the building*. On the 17th, a patient, believed to be entirely ignorant of all that had occurred previously, attempted strangulation, and continued to repeat the attempt until restrained by mechanical means. On the 20th, a patient tried to open a vein in her neck; and, on the 22d, another, who knew of the suicide, and was no doubt influenced by it, attempted her destruction.

"From the 14th of July, fourteen attempts were made by eight different persons; and twelve others, in whom the propensity was strong, required constant observation. The suicidal epidemic prevailed from the 12th to the end of

July; after which time it gradually subsided, and left the minds of most of the patients."

The whole number of patients admitted, since the opening of the			
asylum, is,	.	.	2743
Of whom there have been discharged cured	.	.	1188
Died	.	.	320
	Men.	Women.	Total.
2. The number of patients at the Asylum on			
Blackwell's Island, New York, January 1,			
1849, was,	187	250	437
Admitted in the course of the year	229	230	459
Whole number	416	480	896
Discharged	145	138	283
Died	85	127	212
Remaining, January 1, 1850,	186	215	401
Of those discharged there were cured (from insanity),			172

Thirty-six cases of delirium tremens, one of hysteria, and three of febrile delirium, also recovered.

Causes of death.—Cholera 86, chronic diarrhœa 38, diarrhœa 10, dysentery 4, consumption 21, congestion of brain 12, apoplexy 5, epilepsy 5, paralysis 2, paralysie générale 3, typhoid fever 8, delirium tremens 3, erysipelas 2, old age 4, and of serofula, scurvy, suicide, albuminuria, typhoid pneumonia, chronic peritonitis, softening of the brain, dropsy, and exhaustion from exposure to cold, before admission, 1 each.

There were more deaths in June and July than in the remaining ten months—a mortality caused by the prevalence of the cholera. The first case of this disease was on the 10th of June, when there were 577 persons in the establishment, of whom 497 were patients. Of the whole number, 148 were attacked, and 91 died. The greatest number of new attacks, on any day, was 15, on the 9th of July; the last attack was on the 26th of the same month. "The principal sufferers were those who were usually lying about upon the floor or benches, regardless of their situation, and, in some cases, addicted to filthy habits, resulting from their demented state. Their physical condition was impaired generally."

The subjoined table shows the duration of the disease, from the time of attack, in the 91 cases of death:—

6	died in from 3 to 6 hours; all were collapsed <i>ab initio</i> .
18	" 6 to 12 hours; all were collapsed <i>ab initio</i> .
30	" 12 to 20 hours; all were collapsed, apparently <i>ab initio</i> .
16	" 20 to 30 hours; all collapsed from 4 to 12 hours after attack.
6	" 30 to 48 hours; 5 collapsed, 1 partially collapsed.
4	died on the 3d day; all partially collapsed, and died from prostration.
4	died on the 4th and 5th; 2 collapsed, 2 partially so; all died from consecutive fever.
7	died after the 5th; 3 collapsed, 2 partially so; all died from consecutive fever.

"In those who were not entirely demented the intellectual powers were apparently improved during the severity of the disease; but, at its subsidence, the mind resumed its previous condition."

Of the 148 cases, there was neither diarrhœa nor vomiting in 1, no diarrhœa in 1, no vomiting in 5, and no cramps in 59. Diarrhœa, vomiting, and cramps occurred in 82, and complete collapse in 90. Premonitory symptoms were known to exist in 61, to be absent in 31; and there were 56, in regard to which this fact was unascertained.

"In the case in which vomiting and diarrhœa were absent, there were severe cramps in the extremities, and extreme collapse, death occurring in three hours, followed by strong muscular contractions. The patient in whom diarrhœa was absent had severe cramps in the extremities and abdomen, excessive vomiting and feeble pulse, but recovered. The five in whom vomiting was absent were collapsed directly after the commencement of the disease. In one, cramps were

likewise absent. All died, in three, five, four, three, and sixteen hours respectively. Of the 59 cases in which cramps were absent, 13 were partially and 32 completely collapsed: 36 of this number died."

The term *collapse* is used here in reference to those cases alone in which the patient was pulseless.

The erection of a new "Lodge" for violent patients, and of a large addition to the principal building, has given to the patients of this institution the additional room which was so much needed; and, rendering the improved management the more effective, has been of no little assistance in elevating the establishment above the wretched condition which made it a "shame and a reproach" to a Christian community. "Less restraint," says Dr. Ranney, "has been requisite, and frequently it has not been necessary, during the day, to apply any restraining apparatus, or even to confine a single patient to his room. The number of violent paroxysms, accidents, and attempts to commit suicide, has been lessened. At least one-third of the whole number of patients have been engaged in some species of labour."

Why, Dr. Ranney, people who visited your institution in 1846 would hardly know where they were should they call there again. At that time, one would have as soon looked for a library at the sources of the Nile, or among the Esquimaux, as at that asylum; but now the patients are supplied with "biography, history, geography, philosophy, theology, poetry, fiction," &c., and "free access to the reading-room has contributed much to the restoration of convalescents." That is as it should be. No more blessed resurrection has occurred within the limits of our experience.

In the report of the visiting physicians, Drs. Ogden and Williams, it is remarked, in reference to the cases of cholera, that "several patients refused to take medicine, and those all died; while many in apparent extreme collapse recovered under medical treatment—an important fact, showing the fatality of the disease when left to the unassisted efforts of nature."

	Men.	Women.	Total.
By the report for 1850, it appears that the number of patients, on the 1st of January, was	186	215	401
Admitted in the course of the year	195	196	391
Whole number	381	411	792
Discharged	138	113	251
Died	43	34	77
Remaining, December 31st,	200	264	464
Of those discharged, there were cured			179

Among the cures were 25 cases of delirium tremens.

Causes of death.—Consumption 23, general debility 20, paralysis 6, paralytic générale 5, congestion of the brain 5, epilepsy 2, apoplexy 2, dropsy 3, stomatitis 2, suicide 2, inflammation of the brain, diabetes, empyema, lumbar abscess, erysipelas, chronic diarrhoea, and old age, 1 each.

The proportion of deaths, upon admissions, was four per cent. less than in 1848, and ten per cent. less than in any other year; that of recoveries was two per cent. greater than in 1848: and ten per cent. greater than in any previous year. Such are the expected, because the legitimate, results of the improved and still improving condition of the asylum.

From motives of "economy"—whether *domestic* or *political* we cannot assert, though, judging from the management of some of the institutions upon Blackwell's Island, while they were under the government of the common council of the city, we should strongly suspect it to be the latter—the convicts of the penitentiary have been employed as domestics and attendants at this establishment. Some of the results of this system are thus alluded to in the report:—

"The prisoners not only steal the clothing of the patients, but anything else of value that falls in their reach. As an illustration, the following case may be mentioned, as one from a great number of cases of a similar character. A few years ago, a young lady, who had been insane for some time, was admitted,

and, although partially demented, her self-esteem was gratified by the possession of a beautiful head of hair. The morning after admission, it was observed that her head was completely shorn, and, after a long examination, the ringlets so highly valued were found in the possession of a prison aid in the hall, who had committed the theft for the purpose of selling them to a peruke-maker."

The correction of this evil, by hiring suitable attendants, has been commenced, and will, undoubtedly, be completed before long. Various improvements, both within doors and without, were made in the course of the year. Among the former is the allowance, "*for the first time*," to the patients, of knives and forks, in several of the halls. One of the best evidences of improvement, to persons who know the former condition of this asylum, is found in the gardener's report, where it is stated that an aggregate of 2779 days' labour was performed by the patients, between the 26th of May and the 31st of December. They raised *twenty thousand* cabbages, and other vegetables in proportion.

The visiting physicians, in their report, say that the number of pauper lunatics in New York city, on the 1st of September, 1834, was 116; whereas, on the 1st of January, 1851, it was 464. "Estimating the future increase from these data, the city and county of New York will, fifteen years hence, have more than a thousand lunatics to be supported at the public charge."

They suggest various improvements, which, if adopted and effected, will render this institution one of the best of its kind. At the close of the report, Dr. Williams resigns the place of attending physician.

3. From the report for 1849, of Dr. Buttolph, of the New Jersey State Lunatic Asylum, we extract the following statistics:—

	Men.	Women.	Total.
Patients in the Asylum, January 1, 1849,	46	37	83
Admitted in the course of the year	55	41	96
Whole number	101	78	179
Discharged	39	30	69
Remaining, January 1, 1850,	62	48	110
Of those discharged, there were cured	24	20	44
Died	4	5	9

Causes of death.—Exhaustion 5, consumption 2, chronic diarrhoea 2.

"During the prevalence of the cholera, in neighbouring places, a marked epidemic tendency to affections of the digestive organs prevailed in the institution; but no death, or very alarming sickness of that character, occurred."

The cure of a woman, insane more than *eighteen* years, and that of a man whose disease had existed upwards of six years, are reported. Of the former, Dr. B. says: "No expectation was entertained of her recovery by her friends or the officers of the institution; and it must be regarded as a very unusual exception to the general rule of success, and to be attributed rather to a happy and rare effort of nature, than to the course of treatment adopted, which, at best, could only be considered as having favoured such a result." Of the latter he remarks, that in the recovery of the patient he was "also agreeably surprised, and could scarcely believe that a permanent cure had been effected, until some months of careful observation of his mental state had established the fact."

Now, granting that both of these remarkable cures were, as is suggested of the first, the effect of a "happy effort of nature," the question may still be asked, If it be likely that the "happy effort" would have been crowned with such success, had the patients not been taken to an asylum? We think it would not. Nature wanted just such assistance as can be and is rendered by a well-conducted institution.

The principal part of this report is devoted to a detailed account of the management of the institution, its daily domestic duties, &c. &c.

We proceed to the report for 1850.

	Men.	Women.	Total.
Patients at the beginning of the year	62	48	110
Admitted in the course of the year	52	58	110
Whole number	114	106	220
Discharged	28	30	58
Remaining, January 1, 1851,	86	76	162
Of those discharged, there were cured	15	17	32
Died	6	4	10

Causes of death.—Apoplexy 3, consumption 2, exhaustion 2, chronic mania 1.

Dr. Buttolph makes the following remarks upon treatment:—

“We use medicine sparingly, being influenced somewhat by the opposition that many insane have to taking it; but more especially by the fact, that a physiological treatment is frequently quite as salutary as medical, and vastly more agreeable to the patient. Under the head of mental and moral treatment we include all those means and influences that can be brought to bear upon a person through the medium of the mind and feelings. Thus, the removal of a person from home, and the associations with which their excited, depressed, or perverted feelings have arisen, is often nearly all that is required to restore the healthy balance of the faculties. But, in addition to the effect of separation from irritating causes at home, the new scenes, regulations, employments, amusements, and, indeed, the petty inconveniences and even annoyances met with in an institution, often have the effect, insensibly, to withdraw the attention of the patient from subjects upon which he has dwelt to his injury. Hence, treatment in an asylum is usually more successful than in private, and, as a general rule, is to be recommended. Occasionally, however, cases arise in which the question of removal from home can only be properly settled by an experienced medical adviser, or by resort to the experiment of change.”

After mentioning some improvements in the means of heating the buildings, which is done by steam, the report continues as follows: “As now working, we may safely challenge the world to produce another apparatus so perfect in the arrangement of its details, and so satisfactory in its results.”

Dr. B. recommends an enlargement of the building by the addition of two wings, one on either extremity of the present structure, and each to accommodate thirty-eight patients.

4. Dr. Kirkbride, in the report of the Pennsylvania Hospital for the Insane, for 1849, says that the institution was full at the commencement of the year, and continued so until its close. The average number of male patients was 110, and of females 99. An additional wing, for the accommodation of twenty more women, was constructed in the course of the year. “When the institution was opened, in 1841, it offered accommodations for only 140 patients and their attendants. Since then, additions have been put up, at various times, which will now contain 80 patients with their attendants, making four new classes of each sex, and giving two fine infirmaries, and a great variety of fixtures and arrangements, of immense importance to the comfort of all, but which were scarce thought of in the commencement of the main building.”

The recent additions are heated by steam. “The character of the warm air from a steam or mild hot water apparatus,” says Dr. K., “is so entirely different, and so incomparably more pleasant than that from the common hot-air furnace—its neatness, avoiding, as it does, all dust, dirt, or gas in the rooms, is so striking, and—after the first cost of the fixtures—its economy is so evident, that I feel no hesitation in saying that no one, who has had an opportunity of testing its advantages, will, with our present knowledge, be willing to see any other system than one of these adopted in any building like a hospital, whether for the ordinary sick or for the insane.”

Patients at the beginning of the year	200
Admitted in the course of the year	208
Whole number	408
Discharged	187
Remaining at the end of the year	221
Of those discharged, there were cured	104
Died	19

Causes of death.—Pulmonary consumption 5, apoplexy 2, congestion of brain 1, acute mania 4, chronic inflammation of the intestines 2, chronic organic disease of brain 1, exhaustion from high excitement 2, bronchitis 1, pericarditis 1.

Upon the approach of the cholera, "every reasonable precaution was taken to avoid the exciting causes of that disease. When it is recollected that the epidemic prevailed for some time in our vicinity, and that a public institution within sight of us lost no less than two hundred and twenty-nine of its residents, of whom seventy were insane, we must all feel that we have cause for devout thankfulness to a protecting Providence that I am able to record the fact, that not only was there not a single case of cholera in our household, but that there was no serious acute sickness of any kind, and less general indisposition than is commonly prevalent in the institution and its vicinity."

"The museum and reading-room, put up by the patients and friends of the institution, and presented to it, as a Christmas offering, last year, has been in daily use, and has proved a source of great enjoyment to a large number of the inmates of the hospital." The report is ornamented with beautifully executed wood-cuts, representing the exterior and the interior of this building, so valuable an acquisition to the inmates of the establishment. There are, also, similar views of the "Patients' Cottage" and the "Ladies' Summer House."

Although the facilities furnished, at this institution, for the moral treatment of its patients, are not exceeded, perhaps not equalled, at any similar establishment in the country, yet Dr. Kirkbride, in his untiring philanthropy and his characteristic striving for *the perfect*, looks forward to more. "The treatment of the insane," says he, "has been gradually improved, till many persons believe that little more is to be accomplished. This, however, is a serious error, and ought to be disavowed by all who are familiar with the wants of the insane. Many highly important means of treatment are still to be procured, or their use widely extended, and nothing but an absolute want of pecuniary ability ought to prevent a much greater degree of efficiency than has ever yet been attained. Conspicuous among these means are the various measures connected with the direct mental treatment of the patients—important in all cases, even in those apparently the most hopeless—but indispensable for many whose diseases assume forms that make them peculiarly interesting."

The report for 1850 is the tenth issued by the institution and by Dr. Kirkbride. It contains so large an amount of valuable matter that, although there will be no difficulty in beginning to make extracts, yet we fear that it will not be so easy a matter to decide when and where to stop.

Patients at the beginning of the year . . .	221
Admitted in the course of the year . . .	207
Whole number	428
Daily average number	219
Discharged	215
Remaining at the end of the year . . .	213
Of those discharged, there were cured . .	106
Died	27

Causes of death.—Pulmonary consumption 5, acute mania 5, inflammation of brain 3, apoplexy 2, dysentery 2, general paralysis 2, softening of the brain 2, exhaustion following excitement 1, chronic uterine disease 1, epilepsy 1, purpura 1, disease of heart 1, old age 1.

Six of the patients died within two weeks from the time of admission.

"While simple insanity does not often produce death, it unquestionably tends to lessen the average duration of life, by rendering the individuals labouring under it less able to resist attacks of acute disease, by the difficulty often experienced in discovering sickness in its commencement, and by the resistance offered to the adoption of a proper course of treatment. There is, however, an acute form of insanity which does often cause death by a kind of exhaustion induced by the combined operation of long-continued mental excitement, want of sleep, and refusal of food. To distinguish these cases from ordinary insanity, to which they have little resemblance, the mode in which death has appeared to

be caused has been inserted in the table. When acute disease of the brain has been referred to, it is intended rather to designate active inflammation of that organ than insanity."

After treating of the utility derived from the farm and garden, the workshop and mechanical department, and the museum and reading-room—the last of which has been found so useful that another, so that there shall be one for each sex, is desired—the report continues as follows:—

"During nine months of the past year, the course of lectures and entertainments in the lecture-room *was kept up regularly three times a week*, to the great gratification and benefit of the patients and those employed in their care. I have no knowledge of such a course having been regularly continued for so long a period in any other institution, and it was interrupted only on account of the hot weather rendering the room uncomfortable for so large an audience. During this intermission, on several evenings of the week, the patients were entertained in other modes, on the lawn in front of the main building.

"The practice of daily reading, by the teachers, to the patients in the different wards, especially those devoted to the more excitable class of patients, has been continued with marked good effect.

"The entertainments in the lecture-room have almost entirely done away with the social parties for both sexes that, in the earlier days of the institution, were frequently given, and the effects of the former have been found, upon the whole, to be much more satisfactory. Frequent sewing parties are still held by the matron, among the ladies of the different wards, and a grand entertainment, for all in the house, is always expected on Christmas eve, preparatory to the special dinner given on the following day."

A new feature has been added to the mental treatment, by the establishment of a library *in each ward*, of which there are sixteen. These libraries contain eleven hundred volumes. "A trial of three months has already been made with these books, and the result is most gratifying. The expressions of satisfaction, and of the benefit derived from them by the most intelligent patients, is of itself sufficient to show their great importance, and but three volumes, of little value, are reported to me as having been injured."

We now come to that part of the report which has reference to the whole period of the existence of the institution. This is introduced by some, in our opinion, very just remarks upon statistics, from which we shall extract the most important passages.

"The value of statistical tables, on any subject, must, in a great measure, depend upon the competency of the observer, and the care that is exercised in their preparation; *but the fact that there are some inherent difficulties in the case can scarcely be deemed a sufficient reason for making no attempt to overcome them, or not approaching as near as possible to absolute certainty.* There seems to be no sound reason why the statistics of insanity may not possess as much certainty as those of most other maladies. Notwithstanding the false deductions made by those who have carelessly analyzed these reports and tables, it must still be acknowledged that this evil will be likely to correct itself; and it cannot be denied that, with all their defects, the general circulation of hospital reports, containing the results of judicious treatment, has done more to enlighten the public mind in reference to insanity, to stimulate and give proper direction to the efforts of philanthropists, and eventually lead to a liberal provision for the wants of the insane generally, than all other means combined.

"One great error, often committed in reference to the statistics of hospitals for the insane, has been in using those from different institutions as a basis of comparison, without alluding to the varied character of these establishments, the kind of patients received, in regard to their curability and general health, the different modes prescribed for their admission, the authority to detain them for treatment without regard to the caprices of friends, and various other circumstances having an important bearing upon the results, and without a full knowledge of and allowance for which, all comparisons are perfectly useless.

"Of all the medical subjects that can be tabulated, the number is exceedingly small in which the statements are not, to some extent, matters of opinion,

and this latitude is as allowable in reference to insanity as to any other malady."

	Men.	Women.	Total.
Whole number of patients admitted . . .	999	807	1806
" " discharged cured . . .	466	377	843
" " of deaths . . .	104	72	176

"The number of males in the institution has generally preponderated (over that of females); but not universally. In nearly every year, at some period, the number of the sexes has been equal; and, at other times, there have been more females than males."

The attention of those who have made themselves familiar with the reports of our institutions for the insane, during the last ten or fifteen years, must have been arrested by the fact that the number of females, not only absolute but relative to that of males, in those establishments, has been gradually increasing. While this truth indicates greater public confidence in the utility and the management of the hospitals, it throws a doubt upon what was believed to be a fact in former years—that the number of insane men in this country exceeds that of insane women.

"Among the cases embraced in this report, by far the most prevalent cause of insanity has been ill health of various kinds, and in about the same proportion in both sexes. Intemperance is set down as the *direct* cause, in 106 (out of 1806) patients, of whom 97 were men and 9 women. This, however, is far from showing its real influence in the production of the disease. It tells nothing of its effect on others, nothing of the blighted hopes, the losses of property and character, the domestic difficulties and the mental anxiety, deep and depressing, which follow in its train and owe their origin to its existence. Loss of property, directly or indirectly, is a not unfrequent cause of insanity, affecting men much more than women; while domestic difficulties are a vastly more common cause of its existence among females than males."

Fifteen cases, ten men and five women, were attributed to fright. They "were well marked, and resulted directly from that cause." After mentioning various other causes, the report continues: "Two cases in men and five in women, are reported as caused by the use of opium; and four in men, by the use of tobacco. Opium is much more used by females than males, and its effects upon the mind, no less than upon the body, are of a most injurious character. The use of tobacco has, in many individuals, a most striking effect on the nervous system, and its general use in the community is productive of more serious effects than is commonly supposed. I have never seen anything more than a temporary annoyance result from its entire discontinuance, *and by that course alone the complete re-establishment of impaired health has often been produced.*"

Some physicians report the loss of sleep as a not infrequent cause of mental derangement. Dr. K. gives no case from this origin, as he has found that the loss of sleep arose from some antecedent cause, or was the *effect* of the insanity.

When the physicians to asylums have deprecated the practice of general bleeding in insanity, they have frequently been met by the argument that *they* do not receive patients until the acute stage has passed away, and that, consequently, their authority for the treatment of that early stage cannot be valid. Of the 1806 cases reported by Dr. Kirkbride, in no less than 913 the disease was of less than three months' duration. It is not unreasonable to suppose that a large number of these had not existed two months, and many of them not *one*. Now, where are there any *ten* physicians, in general practice, in one city or vicinity, whose combined experience in the treatment of even *acute* insanity is equal to that of Dr. Kirkbride's? And yet we venture the assertion—and we call upon the Dr. to correct us, if we are in error—that, in all these 913 cases, Dr. K. has not practised venesection, *for insanity*, in a single instance. He may have done it for apoplexy, or congestion of the brain; but for mania, melancholia, or any of the maladies generally included under the name insanity, we presume to say *never*.

But perhaps we shall be referred to the authority of Dr. Rush, whose work on mental disorders is the only one generally known in this country. If so, we have two answers and another authority to offer. First: If, in the time of Dr. Rush, venesection actually was the best treatment for insanity, it does not necessarily follow that it is so now. Second: We consider the authority of Dr. Kirkbride, in the treatment of this disease, as of far greater weight than that of Dr. Rush, and that simply because we believe his experience to have been greater. Now for our authority; and it comes from a high source, the centre of London. In the early part of the present century, the system of treatment at Bethlem Hospital for the insane "consisted of *bleeding, purging, and vomiting, in the spring months. A certain day was appointed on which the patients were bled; another when they were purged; another when they were vomited. They were bled in May, and again in June, THE PRECISE TIME DEPENDING ON THE WEATHER.*" The two authorities are contemporaneous. The latter is from an hospital so elevated in its position, that it is the only one, in the whole kingdom of Great Britain and Ireland, which is exempted from the inspection and surveillance of the Commissioners of Lunacy, and whose physicians, it must, therefore, be presumed, are among the most eminent in London.

But the physicians of probably nineteen-twentieths of the institutions for the insane, not only in America and Great Britain, but in France, Prussia, and Austria, condemn the practice of general bleeding, in insanity, unless it be in rare and exceptional cases.

Dr. Kirkbride has found mania to be the most curable of any of the specific forms of insanity. Next, in this respect, follows melancholia. Monomania occupies the third place; and the least proportion of cures—fifteen in two hundred and twenty-one—was in dementia.

We close our notice of this report with an extract relating to the provision for the insane in Pennsylvania.

"It is now just about a century since the Pennsylvania Hospital, the pioneer institution for the insane in America, was incorporated by the Provincial Assembly, and opened for the reception of patients. With the exception of the Friends' Asylum, at Frankford, established in 1817, and an Insane Department of the Philadelphia Almshouse, at Blockley (which, a few years since, for the first time, took rank as a curative establishment), the Pennsylvania Hospital has been the only institution in the State to which any class of her citizens could resort for the treatment of insanity, and it was, strictly, the only one which offered relief from this malady, without cost, to the indigent of Pennsylvania.

"From the foundation of the Pennsylvania Hospital, in 1751, to the present time, 6062 insane persons have been admitted and treated in its wards. Of these, more than 1000 were poor, who received every care and attention without charge of any kind, and of whom a large proportion were restored to their families in perfect health, and many others, in various states of improvement; the number of this class, under treatment, being limited only by the income of the institution.

"It will be a fitting commemoration of the services rendered by a private charity to all classes of the insane, but especially to the indigent insane of Pennsylvania, during a whole century, that, exactly at the end of that period, our noble Commonwealth will have prepared and put in operation a State Institution,* intended to afford relief to all her citizens who labour under loss of reason, and which, with a judicious organization, and fostered by liberal and enlightened legislation on the part of the government, cannot fail to spread blessings of inestimable value throughout the community.

"When the new institution is in operation, about one thousand insane patients will be comfortably provided for in the State, and, except an hospital in its western part, Pennsylvania will require no material extension of the accommodations for her insane, for many years, although important improvements will be desirable in all the existing institutions."

5. The official year, of the "Asylum for the Relief of Persons deprived of the use of their Reason," at Frankford, Pa., commences with the 1st of March.

* At Harrisburg. It is now in operation.

	Men.	Women.	Total.
Number of patients, March 1, 1848	24	31	55
Admitted in the course of the year	19	19	38
Whole number	43	50	93
Discharged			46
Remaining, March 1, 1849			47
Of those discharged, there were cured			25
Died			5

Causes of death.—Effects of long excitement 1, organic disease of the brain 1, old age 1, tumour on the brain 1, acute mania 1.

Schools and lectures constitute a part of the moral or mental treatment of the patients. "The experience of the past year," says the report, "confirms the opinion heretofore expressed, of the great utility of mental occupation, as well as bodily labour, in the curative treatment of the insane; and also its great importance in promoting the comfort and well-being of those who are incurable. It is not to be expected that the latter class should be capable of making much advance in learning, though their mental powers are certainly strengthened, and more developed by being brought into use, and stimulated by exercise; but, independent of this, important benefits result to them, from the efforts made to interest and employ their minds, inasmuch as they soon begin properly to appreciate the care and attention required to instruct them, and manifest their willingness to repay it by increased correctness of deportment."

In the course of the year, means of forced ventilation were introduced into some parts of the building, the old bath-rooms were improved, and two new ones arranged.

The leading statistics, from the report for 1849, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year	24	23	47
Admitted in the course of the year	16	11	27
Whole number	40	34	74
Discharged			26
Remaining at the end of the year			48
Of those discharged, there were cured			14
Died			4

Causes of death.—"Obstruction of the bowels" 1, acute bronchitis 1, typhoid fever 1, suicide 1.

"Although the cholera prevailed at Frankford and in the vicinity of the asylum, yet the inmates of the institution were mercifully preserved from its fearful visitation; but, during the last summer and the first fall months, epidemic dysentery prevailed, to a considerable extent, among the patients and their attendants."

The report says that "a detailed description of the means that have been employed (in treatment), would be little more than a repetition of the matter of previous reports," and, consequently, no such detail is given. We find a similar idea expressed in the reports of several other institutions. Now, so far as our observation has extended, comparatively few people read the reports of asylums for the insane, other than physicians and those who have some near relative or friend suffering under mental alienation. Hence, a very large proportion of those readers is constantly changing. The new class of them are mostly ignorant of the modern method of treatment, and ought, as they generally wish, to be enlightened thereupon. It has, therefore, long been our opinion that each report of every institution should contain a description of the moral treatment, so full as to give a clear comprehension of it to a person previously without any knowledge upon the subject.

At or about the commencement of the official year for 1850-51, an important change was made in the organization of the Frankford Asylum, by making a physician its superintendent or principal officer. Dr. Joshua H. Worthington,

who, for several years, had been the resident physician, was appointed to the place. He is well qualified for the fulfilment of its duties.

Patients at the beginning of the year	. . .	48
Admitted in the course of the year	. . .	20
Whole number	. . . . .	68
Discharged	. . . . .	25
Remaining, March 1, 1851	. . . . .	43
Of those discharged, there were cured	. . .	12
Died	. . . . .	2

"In general," says Dr. Worthington, "the time required for the cure of any case of insanity will depend on the promptness or delay with which the patient is submitted to proper treatment. The earlier the treatment is commenced, the more speedy will be the recovery; and the reverse. We occasionally, however, meet with cases of long duration, in which the condition of the patient has been much neglected, or where the disease may have been kept up by improper treatment, which recover rapidly when placed under different circumstances. An instance of this kind was that of a young man from one of the interior counties of this State, who was discharged during the last year. He had been insane for two years previous to his admission, and, at the commencement of the attack, had attempted to take his own life by leaping into a well, and afterwards had been kept bound with chains. Under our care, he recovered in the course of a few months; and, during the period of nearly a year that has elapsed since his return home, he has continued entirely well, and been usefully employed in the management of a farm."

In regard to the curability of insanity, Dr. W. states, that, "in this institution, with the reception of all classes, and the disadvantage of premature removals, the percentage of cures of recent cases, since 1842, is 72.25, there having been received, since that time, 191 cases of that description, of which 138 have been restored. If to this we add 10 per cent. as the probable loss sustained by premature removals, we shall have 82.25 per cent., which may be considered as nearly representing the proportion in which recent cases of insanity are curable. During the same period, 121 chronic cases have been admitted, 24 only of which, or 19.83 per cent., have been restored; the proportion of cures, on the whole number received in that period, being 51.92."

6. Dr. John Fonerden became connected with the Maryland Hospital in 1846; but no report, written by him, was published until the close of 1849. This report, therefore, contains the statistics of four years.

	Men.	Women.	Total.
Patients at the hospital, January 1, 1846	58	49	107
Admitted in the course of four years	139	113	252
Whole number	197	162	359
Discharged	131	95	226
Remaining, December 31, 1849	64	69	133
Of those discharged, there were cured	43	36	79
Died	40	17	57

"There were admitted, exclusive of the patients enumerated above, 107 private boarders affected with mania à potu. All of these were discharged recovered, except three who died. As asylums for the insane are not appropriate places for cases of this character, it will probably be discovered, in the progress of moral intelligence, that it is a proper function of the Temperance Societies to adopt the plan of building, on a farm near each of the principal cities, a suitable retreat; to be conducted, under the advice of a physician, by managers of mature age and discretion, who, having the promotion of temperance in view, and sufficient leisure, would aim, by their personal aid, to lead young men, after recovering from the dreadful malady, to love sobriety and usefulness of conduct."

"The number of recent cases of insanity admitted during the four years,"

continues the report, "was very small. Almost all the cases were of more than one year's duration before admission."

Dr. F. mentions the defects of the hospital, and the necessity of a "thorough reform." He evidently looks forward to a new architectural arrangement of the building, or to the erection of a new one, in a more suitable place. We hope that no considerations will induce the managers of that institution to decide upon the former course. Between the investment of a pretty large amount of funds in the attempt to make the present establishment what a hospital for the insane ought to be, and throwing the same sum into the river, there would be, in our opinion, but little choice.

In allusion to defective training, in early life, as a cause of mental disorder, the report closes with the following beautiful effusion of the heart of a father and, in the best and noblest sense of the term, a *man* :—

"How important is it, then, that childhood and youth should be gently led, by a patient and loving help, both in play and at pleasant work, into innocent habits of the mind, and, in agreement therewith, into bracing habits of the body. For, so far as such conjoined habits become identified with the physiological life, they will combat, triumphantly, many a hereditary peculiarity, mental and corporeal; and they will be strong in vital power to resist the invasion of disease. More than this; becoming, in due time, subservient to the religious principle, in its legitimate works of sincerity and justice, they will surely generate a purity of purpose in the discharge of domestic and all other duties; and thus, by exempting the mind from an abiding presence of selfish thought and inclination, they will be a safeguard against most of the secondary causes of disordered ideas and emotions, of incoherent speech and impulsive actions. So may the human mind, apart from the blighting power of unavoidable disease and accident, gradually work out its emancipation from the infirmities of a natural temperament; so can it earn the faculty of living in freedom according to reason."

Statistics from the report for 1850 :—

	Men.	Women.	Total.
Patients at the beginning of the year	64	69	133
Admitted in the course of the year	25	15	40
Whole number	89	84	173
Discharged	21	11	32
Remaining at the end of the year	68	73	141
Of those discharged, there were cured	8	6	14
Died	5	1	6

Seven cases of mania à potu were also received, and discharged cured.

Dr. Fonerden calls the attention of the President and Board of Visitors to the necessity of providing additional accommodations for the insane, in the State of Maryland. The only argument adduced is the impossibility of receiving all the applicants at this institution. "It may now happen," says he, "that one or two months will elapse before another public patient can be received. In the mean time, urgent applications will continue to be made for the relief of the public and of families, and for the protection of the destitute insane, whose cases, in most of the counties, are dependent upon this institution for custodial arrangements. On the day of writing this, applications have been made for the admission of three patients at the expense of the counties."

P. E.

ART. XVIII.—*Obstetrics: The Science and the Art*. By CHARLES D. MEIGS, M. D., Professor of Midwifery, and the Diseases of Women and Children, in Jefferson Medical College, at Philadelphia, etc. etc. Second edition, revised. With one hundred and thirty-one illustrations. Philadelphia, Blanchard & Lea, 1852: 8vo. pp. 759.

THE work of Dr. Meigs, whether as a treatise adapted to indoctrinate the student into the science and the art of obstetrics, or as a table-book, for frequent reference on the part of the practitioner, has been already assigned, by the almost unanimous verdict of the profession, a very high rank among the numerous kindred works received as authoritative in this country and in Europe.

In the general correctness of its theoretical teachings, and the fulness, explicitness, and excellence of its practical directions, throughout the whole scope of the science and the art of which it treats, the volume before us will certainly bear a favourable comparison with the most esteemed of the obstetrical treatises in common use, while, in some respects, it appears to us better adapted than many of them for the instruction of the student and young practitioner.

The opportunity afforded by the demand for a second edition has been made use of by the author for introducing many improvements in the matter and style of the treatise, considerably augmenting the text, recasting some parts and cancelling others; while the literary execution of the whole has been subjected to a careful revision.

It is not our intention to enter upon an examination of the several additions and revisions that have been made in the present edition of Dr. Meigs's work, nor do we esteem this necessary, as it will, of course, very speedily find its way into the hands of the majority of American practitioners, to whom we can, with much confidence, recommend it, as embodying a very full exposition of the doctrines and practice of obstetrics—a sure guide to the learner, and, at the same time, a safe counsellor to the young practitioner in cases of doubt and of difficulty.

We confine our remarks, however, to that portion of the work which treats strictly of obstetrics—the science and the art. In the sections appropriated to the consideration of the pathology and therapeutics of the female, there are many important points, in relation to which we entertain opinions very different from those advanced by the author; opinions which we believe to be based upon accurate and accumulated observations—our own, as well as those of other practitioners in this country and in Europe.

The views advanced by Dr. Meigs in relation to puerperal fever—its nature and its treatment—though enforced with a plausibility and earnestness which would almost persuade us to receive them as true, are certainly calculated to lead the young practitioner into error. While it is admitted that peritoneal inflammation, or metritis, occurring in the puerperal female, though a disease, when neglected in its earlier stage, most dangerous and rapidly fatal, has nothing specific in its character, and may be disarmed of its violence, in a large number of cases, if attacked at its onset by bloodletting and other active antiphlogistic remedies, still numerous incontestable facts prove, beyond the possibility of doubt, that the parturient female is also liable to be attacked by a fever, which is peculiar in its character, communicable from the sick to the well, and by the intermediation of those who have been in immediate contact with the sick, and which holds a very close relationship to certain forms of erysipelas. This fever is in all cases attended by peritonitis, metritis, or uterine phlebitis; but there exists also, from the onset, a peculiar morbid element, a diseased condition, probably, of the blood, which gives to it a specific character, and peculiar malignancy. This form of puerperal fever most commonly occurs as an endemic. While it is scarcely controllable by any course of medication, experience has shown that in its treatment direct depletion by the lancet, as well as the other antiphlogistic remedies, are inadmissible.

As a history of the ordinary forms of puerperal peritonitis and metritis, we

must admit the entire correctness of the account given by Dr. Meigs of what he terms child-bed fever, and recommend it to the closest attention on the part of the student and practitioner. Nor do we feel inclined to dispute the general outlines of the author's views in respect to its pathology, or to call in question his directions for its treatment. The objection we make is that, in treating of the subject of child-bed fever, Dr. Meigs has not covered the whole ground—that he has omitted an important form of puerperal fever, marked from its very onset by the most unequivocal indication of adynamia, and in regard to which neither his pathological nor therapeutical views are true; and that, by this omission, they who consult his work for instruction will be misled, by supposing that all cases of child-bed fever consist simply in inflammation of the womb or of its veins, or in inflammation of the peritoneum, and that free and early blood-letting is the only remedy upon which any reliance in their treatment can be placed; and though experience and careful observation will not fail to convince them of the inaccuracy of both propositions, it must, nevertheless, be at the expense of no little mortification, and professional disappointment.

In his pathology of cyanosis neonatorum, Dr. Meigs, we believe, stands alone; and certainly in opposition to all the recorded facts derived from morbid anatomy. In evidence of the correctness of the views advanced by him, he adduces a series of cases to show that cyanosis may be cured by placing the infant in such a position as he supposes will cause the weight of the blood to force down the valve of Botallus upon the open foramen ovale, and thus prevent the direct passage of the blood from the right into the left cavities of the heart. That in many cases of partial asphyxia occurring in children from causes unconnected with organic lesions of the respiratory or circulatory systems, almost immediate relief will be derived by causing the patient to assume the position indicated, is certainly true; it is even true, that in unquestionable cases of true cyanosis, all the prominent symptoms will frequently be very considerably relieved for a time by the same means; this does not prove, however, that the relief in these instances is caused by the closure of the open foramen in the septum between the two auricles of the heart. Such an explanation is a mere hypothesis, unsupported by any direct evidence; and in pathology, one hypothesis cannot be received in proof of the correctness of another.

D. F. C.

ART. XIX.—*The History, Diagnosis, and Treatment of the Fevers of the United States.* By ELISHA BARTLETT, M.D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the State of New York, etc. etc. Third edition, revised. Philadelphia, Blanchard & Lea, 1852: 8vo. pp. 595.

As a faithful exponent of the present state of public opinion in relation to the history, pathology, etiology, diagnosis, and treatment of the fevers of this country, the work of Dr. Bartlett becomes a valuable if it be not an essential addition to the library of every physician, and we are pleased that the profession have so far endorsed this opinion as to require the issue of a third edition, thus giving the author an opportunity, of which he has industriously availed himself, to incorporate in the different chapters of the treatise whatever additions recent investigations have added to our knowledge of the several subjects discussed.

In treating of the fevers of the United States, Dr. Bartlett has not contented himself with a mere synopsis of the facts and opinions of the leading writers on the subject, but has carefully analyzed and compared their various observations and deductions, and has selected such only as appear to him to present most clearly the indications of accuracy and truth.

Dr. Bartlett strongly asserts the specific character of each of the four forms of fever described by him, namely, the typhoid, the typhus, the periodical, and the yellow fever; each of which, in his opinion, differs essentially from all the others. That ordinarily the several forms of fever alluded to present each well-

marked distinctive characters is unquestionably true, and yet all are aware that cases do occur in which the diagnosis is by no means so easy. Protracted remittents assume, not unfrequently, very much the characteristics of typhoid fever, if they do not in fact occasionally run into the latter. We have repeatedly seen the phenomena of typhoid and typhus fever so intimately blended in the same patient as to render it impossible to determine under which of these forms of febrile disease he was actually labouring, while the more intense grades of bilious remittent fever are often with difficulty distinguished from yellow fever.

However, Dr. Bartlett has certainly the weight of medical authority in favour of the views advanced by him upon this subject. We ourselves *only doubt* the specific difference of the several forms of essential fever, having seen no incontestable evidence by which this difference is established; but we, at the same time, candidly admit, that we have no positive facts to prove that these several forms are mere modifications of one and the same disease. D. F. C.

ART. XX.—*Homœopathy: An Examination of its Doctrines and Evidences.* [Fiske Fund Prize Dissertation.] By WORTHINGTON HOOKER, M. D. New York, 1851: 12mo. pp. 146.

On the Fallacies of Homœopathy, and the Imperfect Statistical Inquiries on which the Results of that Practice are estimated. By C. H. F. ROUTH, M. D., M. R. C. S. London, 1852: 8vo. pp. 85.

DR. HOOKER'S essay is essentially the same with the chapter on homœopathy in his work entitled "Physician and Patient," and which has been reviewed in this Journal. It is intended, we presume, even more than that work for popular instruction. It contains much logic and much sarcasm directed against the infinitesimal nonsense and the psoric absurdities of Hahnemann's followers, much more than was necessary for annihilating all that is really vital in these vexatiously minute parasites on the body medical. We cannot congratulate the accomplished author on his success in hunting such small game; the trophies of the chase are hardly worth the bringing home.

The real *doctrine* contained in the homœopathic system is quite as independent of these fooleries as the latter are of one another. The *practice* rests upon a tripod, of which the three legs have no physical or metaphysical connection whatever, and which are ludicrously unequal in size, so that the fabric, taken as a whole, tumbles to pieces upon the slightest touch. Not so the homœopathic doctrine. It was conceived and matured before the quackish instincts of Hahnemann felt that it might be made profitable by linking it with a trade, an idea which may very naturally have taken possession of him during his residence among the money-changers of Leipsic, where his brazen image now appropriately adorns the market-place. "Psora" and "globules" were spells invented to lure the silly mob who could not be stirred by any merely scientific charm. Had the formula of *similia similibus* been propounded by an honest physician, it might have excited discord, and, like the Brunonian and other hypotheses, even have arrayed the medical profession in opposing camps. Like these, too, it would more speedily and certainly have achieved whatever good it was capable of. But while by itself it was merely a controvertible proposition, it became the scoff and jest of the medical world, by being linked with propositions intrinsically preposterous and absurd.

Hahnemann tells us that homœopathy was the result of his own reflection and observation. It may have been so; but he was certainly not the first who entertained the like notion of medicine. Dr. Hooker quotes from Stahl a passage which explicitly contains the homœopathic doctrine: "The received method in medicine of treating diseases by opposite remedies, that is to say, by medicines which are opposed to the effects they produce, is completely false

and absurd. I am persuaded, on the contrary, that diseases are subdued by agents which produce a similar affection—burns by the heat of a fire to which the parts are exposed; the frost bite by snow or icy cold water; and inflammations and contusions by spirituous applications.” Nor was Stahl a whit less arrogant in his pretensions than the completer of his doctrine: “What I write,” he exclaims, “the grace of God has taught me;” and the “sage of Cœthen” allows of no compromise between his dogma and other doctrines, as if Nature possessed but one possible means of achieving her purposes.

In his zeal to expose the folly of the homœopathic system, Dr. Hooker goes, we think, beyond the limits of sound reasoning; in his legitimate aversion to accepting as an exclusive dogma the *similia similibus curantur* of Hahnemann, he seems inclined to subscribe to the equally exclusive *contraria contrariis medentur* of Galen. He, therefore, attempts to explain away the illustrations which the homœopathsists, and before them Stahl, have cited in support of the former doctrine. According to him, the application of cold to restore the vitality of a frosted limb is not an illustration of the homœopathic principle. A limb that is frozen has lost its heat, and is to be restored by the communication of heat to it, says Dr. Hooker; and if this be done by snow or ice, the author contends that the cure is effected by heat and not by cold. Such a distinction strikes us as not very logical. Unquestionably, cold relieves the ailment which cold has produced. So, too, of another illustration. Heat relieves superficial burns. But Dr. Hooker thinks that this “is not an example of *like curing like*, but of *same curing same*, which is quite another thing.” The distinction, we confess, eludes our comprehension. But if this illustration be unsatisfactory, surely the plan of treating burns by stimulants, according to Kentish’s method, is open to no objection as an illustration of homœopathic cure. But our author thinks that, unless turpentine were actually capable of producing the condition of the skin it is alleged to cure, the method is not homœopathic. This, we conceive, is scarcely fair. A superficial burn may be cured by holding it to the fire, by turpentine, by ice, or by cold water, by lime-water and sweet oil, by raw cotton, &c. It will not be pretended that the mode of action of the first two applications, and those of the following ones, are identical. Will not every one allow them to be opposite? The former is the homœopathic, the latter the allopathic method; and either is appropriate, even in the identical conditions supposed.

The illustrations here presented are amongst the most striking which the subject affords, and, as has been seen, were adduced even by Stahl; but there are many others made familiar by every day’s experience. Emetics are constantly given to relieve nausea and slight vomiting, by inducing a complete evacuation of the stomach; purgatives cure the diarrhoea excited by irritating ingesta, and not that only, but to arrest the discharges of dysentery; alcohol cures delirium tremens; nitrate of silver suspends urethral and other inflammatory discharges; blisters arrest erysipelas, &c. In all of these, and many analogous instances, the remedy has the faculty of producing in the healthy state a condition analogous to that it is capable of curing in a state of disease. Such examples avail no more to demonstrate the truth of the homœopathic theory, than the more numerous and familiar facts of daily experience warrant the adoption of an exclusively allopathic theory. Natural truth is no more to be pressed into the artificial formulæ of scientific systems, than the varied, graceful, and ever-changing types of living beings can be represented by mathematical diagrams. Science is not in systems, but systems are artificial enclosures in the field of science. Truth lies without as well as within them. The pretension of Hahnemann to limit the power of medicine in curing disease to a certain, and that rather an exceptional mode of action, was neither more nor less than has been done by medical philosophers from Galen to Liebig. Had he done no more than this, he might have effected real good by enlarging the limits of our knowledge. But when he put forward as essential parts of his system the inane, absurd, and wicked doctrines of infinitesimals and psora, the man of science disappeared behind the mask of the charlatan, and the medical profession instinctively shrank from all communion with a convicted impostor. In this case, as in that of a still more famous quack, there is no

reason why we should not accept what may be true in the teachings of Hahnemann, as we have adopted what was true in the ravings of Paracelsus. Perhaps, too, the best antidote to the gross extravagances of the latter is to be found even in the subtle and shadowy unrealities of the former. The question, the capital, the vital question is, *what* will cure disease? Once settled, we may inquire *how* is disease cured? Till the former question is decided, the latter is a conflict about systems, a mere war of words, never ending, still beginning, and apparently as far from a solution now as it was two thousand years ago. If the facts of therapeutics really admit of being arranged in two classes, according to the likeness or unlikeness of the natural effects of remedies to the diseases they cure, science can but gain by this truth being known. Its value would be none the less because a portion of it formed part of the system of a notorious charlatan of the nineteenth century. Posterity would smile at its rejection, upon that ground, by a generation that piques itself upon being philosophical. But, admitting the occasional application of *similia similibus* to the phenomena of therapeutics, we must be careful lest the doctrine seduce us into a too general application of it, lest we elevate the exception to the dignity of a rule. Even as a matter of medical faith, it were well for this point to be clearly apprehended. Otherwise the weak-minded might be seduced into believing a revolting heresy, and the weak in conscience might find in our restricted and philosophical assent to a theory, an excuse for all the deceit and crime which are in practice associated with subscription to the theory by its exclusive partisans.

Dr. Routh's essay attacks homœopathy from a scientific position. After exposing, as so many others have done, the arithmetical absurdities of the infinitesimal calculations, and the bad grace with which it is defended by some of its less ignorant and more honest promoters, and further, the knavish practice of concealing under the form of innocent-looking globules, large, dangerous, and even fatal doses of the vegetable alkaloids, the author devotes himself to an examination of the statistical returns which are relied upon, when reason fails, to confirm the faith of homœopathic patients, and, perchance, practitioners too. He has taken a great deal of unnecessary trouble to show that, all other circumstances being equal, the mortality of a given disease varies greatly in different countries, and that, consequently, such rate of mortality is not by itself an index of the value of the treatment employed. This element would certainly be one of weight and value in comparing accurate and trustworthy statistics proceeding from several countries; but it ceases to have any value so soon as a portion of the statistics are proved to be false. The jurisdiction of the case is changed; it must be transferred from the court of science to the criminal sessions, where the defendant, if guilty, not only will lose his cause, but be branded with infamy.

Passing over, then, the very interesting illustrations of the power of the imagination to cure disease, when appealed to boldly and confidently, we come to the more important part, in which the fallacy of homœopathic statistics is exposed. The statements of mortality in the homœopathic hospitals are shown to be between seven and ten per cent., on an average, lower than in medical institutions of the same kind; and are also shown to rest in part on the very convenient method of excluding all moribund cases from the tables of the former. The cases, too, in homœopathic and medical hospitals are not identical. The author relates, of his own knowledge, that in Fleischmann's Hospital, at Vienna, the serious cases are few and far between; the milder cases, on the contrary, of frequent occurrence; and he gives a numerical statement of a large proportion of the diseases which figure in the list of admissions, many of which require no active treatment at all, and not one that is ever fatal by itself. The proportion of cases of phthisis received into hospitals generally may be inferred from Dr. Routh's instances to vary between 4 and 9 per cent., while in two principal homœopathic institutions they do not exceed 1.6 per cent. Besides, in Fleischmann's institution he has the sole control over the admissions, and there is no check at all upon his diagnosis. It is remarkable, too, as showing how mild in general are the cases received into homœopathic hospitals, that

they receive a very much larger number of patients in proportion to the number of beds, than medical hospitals do. The author follows the statistics of homœopaths in different diseases, and proves conclusively that there is probable ground for believing the cases of diseases to be selected and their diagnosis wrong. His mode of treating the subject does not allow of much condensation; and we, therefore, conclude this notice of his laborious and minute comparisons, by transcribing a part of the general conclusions at which he arrives:—

In the homœopathic cures effected, globulism is absolutely for nothing; and the practitioner who would attribute such cures to globulism must be considered as either full of simplicity, or a friend to quackery; but they are due—

1. To the influence of the mind on the body, through the voluntary or emotional systems.

2. To the *vis medicatrix naturæ*.

3. To excellent dietetic regimen.

4. To allopathic [medical] treatment surreptitiously conjoined. And, secondly—

1. That in many cases the homœopaths are inexact and inaccurate in their diagnosis.

2. That, therefore, their statistical returns are in many cases falsified.

3. That they allow nothing for the different and varied circumstances under which different patients are placed, as type, comfort, locality, idiosyncrasy, &c.

4. That their comparisons with allopathic [medical] practice are not to be depended upon. A. S.

ART. XXI.—*Lectures on the Principles and Practice of Surgery.* By BRANSBY B. COOPER, F. R. S., Senior Surgeon to Guy's Hospital, &c. Philadelphia, Blanchard & Lea, 1852: 8vo. pp. 771.

THESE lectures were originally delivered to the clinical class of Guy's Hospital, London. They are now republished, with some additions, and after a careful review by the author, as they at first appeared in the columns of the *London Medical Gazette*; they do not, therefore, seem to call for any lengthened notice at our hands.

Mr. Cooper disclaims, in his preface, the intention of presenting the book to the profession as a systematic treatise on surgery. He says, "It is not without mature consideration that I have determined upon publishing the present volume: but I have come to the conclusion that, as its contents are of a practical character, embodying the experience of twenty-five years, during which time I have occupied the position of Surgeon to Guy's Hospital, it would be found useful, not only to the student, but also to those who have entered upon the practice of their profession. My object has been to furnish a useful compendium of surgery, in which the student may meet with a clear account of the practice of that science, established not only on my own experience, but likewise upon the best acknowledged authorities."

The chapters referring to special surgical diseases and injuries are preceded by several which relate to general pathology, viz.: there is one upon the *blood*; another upon the *bloodvessels* and *absorbents*; a third upon *constitutional irritation*; a fourth upon *inflammation*. And subsequently the topics which are commonly embraced in works of this kind are treated of as much in *extenso* as the limits of the volume permit, and these are unusually wide. Thus thirty pages are devoted to diseases of bone: twenty-three to those of joints; fifty-six to fractures: between forty and fifty to dislocations; two hundred and sixty to the surgery of the different regions, &c. &c.

From the examination which we have bestowed upon the different chapters, we have no hesitation in expressing the opinion that they contain much which will reward the consultations of the practitioner, particularly in the purely practical questions. For, as it were only reasonable to expect from the connec-

tion which Mr. Cooper has maintained with so large a hospital as Guy's, and for so many years, the book is filled with the results of his personal observation upon almost all the affections which a surgeon can expect to meet with; and numerous individual cases are cited in every chapter, to illustrate peculiarities of symptoms, or to enforce the propriety of a particular treatment. But in matters which involve the scientific rather than the practical knowledge of the author; in questions of pure pathology, the book cannot be regarded as an exponent of modern views.

Thus, in the chapter on *Diseases of the Joints*, it is stated, at p. 256, in speaking of *ulceration*, as it is usually called, of the articular cartilage: "If the synovial membrane be the source of the altered action, the cartilage desquamates in the same manner as the cuticle separates from the true skin. I do not apply the term ulceration to this action, as the usual appearances of ulceration do not manifest themselves, such, for example, as the presence of vessels conveying red blood; but I believe the redness in such cases proceeds from the bursting of the bulbous extremities of the capillaries, so that the blood is permitted to pass at once into the canals ordinarily receiving only those of its constituents which are necessary to the nutriment of the structure; but it sometimes happens that, under the influence of disease, the capillaries prolong themselves into the canals under the form of distinct bloodvessels." We need scarcely point out the fallacy of these opinions: the merest tyro in pathological and physiological studies knows that the *bursting* of bloodvessels gives rise to ecchymosis or other more serious hemorrhagic effusions, according to the size and character of the vessels; and that the nutrition of extravascular tissues is effected by imbibition, without the aid of distinct *canals* for the transmission of the plasma. Again, on the same page, Mr. Cooper speaks of the points or patches at which the articular cartilage has been removed in consequence of inflammation of the articular face of the bone, as becoming filled by portions of synovial membrane, which are prolonged inwards, as it were, from the edges or circumference of the cartilage. The membrane thus abnormally present becomes highly vascular, and was regarded by my late colleague, Mr. Key, as an apparatus for the absorption of the cartilage," &c. But the more recent observations and experiments of Mr. Goodsir, and Dr. Redfern, have demonstrated the fact that the vascular membrane spoken of as appearing upon these points does not belong so much to the original synovial membrane, but that it is a new product, an adventitious fibrous tissue. And, in fact, a careful examination of the papers of Mr. Key, published in the 18th and 19th volumes of the *Medico-Chirurgical Transactions*, will show that this author himself was aware of the existence of the false membrane, and admitted that the vascularity in question was seated in it in many of the cases examined.

We might cite numerous other passages from different chapters of Mr. Cooper's volume, which would establish more generally the truth of our opinion as to the inaccuracy of very many of the pathological doctrines advanced or adopted by the author. But the limits and intention which we have assigned to ourselves in this notice will not admit of our longer dwelling on this point.

The contents of this volume were originally given to the profession in oral lectures, a mode of committing one's self to the public which is exceedingly likely to involve one in numerous difficulties, unless the lecturer has complete self-possession and is accustomed to the duty. One of these faults is apparent in Mr. Cooper's lectures; we allude to the contradictory opinions which he expresses concerning the same fact or question. Thus, in the chapter on Gunshot Wounds, he says, at p. 96: "The wound made by the entrance of the ball is small, and its lips are inverted, discoloured, and valvular, while the opening through which the ball has made its escape is much larger, with an everted and ragged edge;" while at p. 99, the following sentences occur: "Many different statements have been made respecting the appearance and comparative size of the openings made at the entrance and exit of the bullet. It has been said, that the hole by which it enters is smaller and cleaner than that by which it leaves the body, which is ragged and more gaping. This does not, however, seem to be correct; the opening by which the ball enters appears to be generally somewhat the larger of the two. But, in fact, there is so little difference between

them that, unless the direction of the shot were previously known, it would be impossible to say by which opening the ball entered, or by which it left the body." And there are opposing statements of the same kind which we need not quote. Such discrepancies must have crept into the lectures without due reflection, and have been overlooked in the subsequent revisions which these underwent preparatory to their publication first in the *Gazette*, and subsequently in the present form. But though they may be acknowledged to be inadvertencies, they are not the less calculated to mislead and perplex young readers, and therefore they constitute a blemish in the book.

Another defect noticeable in Mr. Cooper's work, and it must be conceded to be a very serious one, is the frequent slurring over of important topics, and the omission of numerous others. This deficiency, like that just mentioned, is undoubtedly to be ascribed to a want of proper method and of due reflection in the enunciation of his lectures, errors which subsequent revisions preparatory to publication should have corrected. We take as illustrations of these imperfections, the following examples, almost at random from different parts of the book. Mr. Cooper says that the fracture of the lower portion of the radius is very frequent, forming almost a third of all the fractures of the bone. And in consideration of this circumstance, as also of the importance of the integrity of the forearm, and the necessity of a correct diagnosis and a proper treatment, it were proper to expect a somewhat detailed account of this injury in reference to all important points. But the whole subject is discussed, or rather passed over, in the most unsatisfactory and unsurgeon-like manner. We will quote the whole of the author's remarks with reference to it. "Fractures of the lower part of the radius are often misunderstood, and may be taken for incomplete dislocation of the wrist; but the power of restoring its normal conformation by slight force, together with the crepitus, is sufficient to distinguish this accident from dislocation.—The following is a case of fracture of the lower portion of the radius: Janet Westrook, æt. 68, was pushed down in the street, falling forwards; on thrusting out her hand to save herself in the fall, it came violently in contact with the curb-stone, the consequence being fracture of the radius about two inches above the styloid process. She was immediately brought into Guy's Hospital. The swelling being but inconsiderable, the nature of the accident was ascertained at once. The usual symptoms of fracture of the radius were all present, viz.: fixed pronation of the hand, diminished width of the forearm, from the approximation of the fractured extremities to the ulna, and the rotundity produced by the displacement of the muscles and tendons of the interosseal space. The limb was put up in the ordinary way, the hand being left pendent. In the course of five weeks the woman left the hospital quite recovered, and with perfect motion of the radio-ulnar articulations." These sentences comprise the whole of the author's observations concerning the symptoms and treatment of this fracture, excepting that, in speaking of treatment of fractures of the forearm, he says, "When only one bone is broken, the treatment does not differ from that just described, excepting that in fracture of the lower part of the radius, the hand should be more bent inwards towards the ulna, and kept in that position during the progress of the cure."

Again, in the chapter on diseases of the bladder, *inflammation* of that organ occupies only half a page.

Such faults as these which we have alluded to might easily have been avoided by a surgeon of Mr. Cooper's large professional experience, and daily observation of the deficiencies and perplexities of students, as well as of practitioners, whose age and position have not been so favourable to the acquisition of practical knowledge as his own.

But though the work does not realize the expectations which the reputation and advantages enjoyed by Mr. Cooper would justify, still the reader will find that it contains a great deal of very judicious and valuable advice concerning the treatment of surgical diseases.

F. W. S.

ART. XXII.—*An Essay on Organic or Life Force.* By J. H. WATTERS, A. B. Philadelphia, Lippincott, Grambo & Co., 1851: 8vo. pp. 36.

THIS essay was prepared as an inaugural thesis for the degree of Doctor of Medicine in the University of Pennsylvania. It is a production in every respect creditable to its author, indicating a mind adapted to close inquiry and to a careful investigation of the phenomena of the living organism, and of their causes and results, so far as these can be made the subject of observation, or may be inferred by cautious analogical reasoning.

The subject of the essay is a most interesting and important one; a correct appreciation of which would divest physiology of many of its present obscurities and apparent discrepancies, and prepare us for the study of the pathological conditions of the human organism with a far better prospect than has as yet been afforded us of arriving at a clear conception of their nature and causes, as well as of the means adapted for their prevention and removal.

Discarding the once universally received doctrine of an independent vital principle by which organization was supposed to be produced, and which, by a constant control, direction, and modification of the influence exerted upon organized matter by the several physical forces to which it is constantly subjected, gave rise to all the vital phenomena, from the simplest to the most complex; repudiating this ancient hypothesis, and the equally untenable one by which the so-called nerve force is substituted for the vital principle, many modern physiologists have been inclined to view vitality as nothing more or less than the result of organized matter acted upon by the ordinary physical agents, in precisely the same manner in which they act upon that which is unorganized—the difference in the effects being due entirely to the different arrangement and combination of the particles of matter in the two cases.

This latter is, in substance, the doctrine advocated by the author of the essay before us, and he has with great acuteness adduced a series of arguments in its support, the force of which, if the doctrine alluded to be confined strictly to an explanation of the phenomena of organic life, the advocates of a living principle, equally with those who insist that every living act is the result of nerve-force, will find it extremely difficult to evade.

"An organism," according to Dr. Watters, "is but a machine, by means of which the Creator takes advantage of the laws with which he has endowed matter to effect certain objects which are the designs of God, and not of man. It would be of no advantage to know whether living beings were the object for which matter was created with its existing laws and properties, or whether there was no such object in the Creator's mind; and this is not a subject of investigation, though it may be of speculation. It is enough for us to know that the organism is a machine which acts in perfect accordance with the laws of matter, and is not overruled by some unknown independent agent, 'the vital principle;' that life is the necessary result when the organism is placed under the proper conditions; and that this result grows out of the particular combination of the matter constituting it."

The main position laid down by the author, and in support of which a number of cogent arguments are adduced, is "*that life or the actions of an organism are produced by forces which are evolved in the decomposition or decay of that organism.*" The term organism being made to include the granules or germs, though apparently formless, from which cells are developed under proper conditions.

"When we look," remarks Dr. Watters, "into the organic world, it is observed that the natural tendency of all organic matter, under the influence of the external conditions of life, is to resolve itself into simpler compounds; but in the living organism there is an action directly contrary to the observed natural tendency. It was, no doubt, from this *apparent* reversal of the laws of matter, that first originated the idea of an independent agent residing in the system, whose office it was to overrule these laws, and give direction to vital actions. It is, no doubt, from this, that even to the present time, the 'vital principle' enters into the explanation of all vital phenomena. The attention of physiologists has been

almost exclusively directed to the building up of the organism. Disintegration has been thought worthy of attention only as it is modified by this 'vital principle,' or, as it makes continued nutrition necessary. As decay is common to all organic matter, the attention has been diverted from this to organization, which is peculiar to living beings; and nutrition is looked upon only as a means of 'counteracting' the 'destructive' tendency to decay, rather than as affording a necessary condition to continued decay. Though we cannot conceive the existence of a living being without change, yet this tendency to change has been considered destructive, rather than essential to life. It is thought that it will appear from what is to follow, that the arrest of the natural laws of matter in a living organism is more apparent than real; that vital actions are as much the result of these natural laws as are death and decay; and that death and life have the relation to each other of antecedent and consequent. Though death is so common and so *natural*, that we are accustomed to look upon it as a matter of course, yet it is no less difficult to tell why we die than why we live; both are but evidences of the Creator's will. We are constantly dying while we are living, and to arrest decay would be to arrest life.

"While Dr. Carpenter ridicules the theory of a 'vital principle,' he seems to fall into greater difficulties than he has obviated, when he offers as his theory the following: *The dormant vital properties originally stamped upon matter capable of assimilation are developed by the very act of organization.* He gets over the objection which would naturally arise to this theory, that life force must have existed *prior* to the *act of organization*, in a very summary manner; as also, the objection arising from the *universal* tendency of organized matter to resolve itself into simpler, rather than into more complex compounds. While the views contained in this article are directly opposed to the theory of a 'vital principle,' they are equally opposed to the theory that *matter was originally endowed with vital properties, which are developed by the act of organization.* These views are, that in an organism, the act of resolution of a complex into simpler compounds, evolves forces which give direction to chemical and organic actions; and, as life is the result, the terms organic, germ, or life-force may be employed to indicate the resultant of these forces. This force is produced when the conditions of life—the germ, air, heat, and a fluid plasma—coexist. If the above proposition be true, life is not derived from the parent, but originates in the changes which take place in the germ itself. It has been the doctrine of some that *germ-force* is derived from the male parent; of others from the female; while others again held that it is produced by both parents at the same time, and by the same act that the germ is. But there are reasons to believe that *germ-force* is no more derived from either parent than galvanic force is derived from the individual who constructs a battery."

The first series of arguments advanced by Dr. W. in support of his general position are, to show that, according to the universal law of chemical action, the properties of an organism could not be developed except by *disorganization*: that when it is said that forces are evolved by the decay or oxidation of the organism, entirely distinct from the chemical compounds that result, nothing is assumed which is not exemplified in every chemical action which takes place, whether in the organic or inorganic world; and, to point out the fact that in organic chemistry, oxidation evolves a force which produces deoxidation: and thus to show, if possible, that disorganization, that is the oxidation of the organism, may evolve forces which produce organization.

"Wherever there is life," urges the author, "there is decay, and in health, decay is always in proportion to the vital activity. This shows some necessary connection between the two, and a possibility that there may be some truth in the foregoing proposition. It may be said, if the proposition be true, there should be life wherever there is decay. But not so; if an acid be thrown upon zinc, oxidation takes place, but there are no electrical phenomena unless there be a peculiar arrangement of the zinc with another metal; so it is only under a peculiar arrangement, as in an organized structure, that decomposition and decay give rise to vital phenomena.

"There is no fact better established in physiology than, in the exercise of the animal functions, the *destruction* of the organ is directly in proportion to the

activity of the functions. There can be no doubt but the final cause of the exercise of organic functions in animals is, so far as the *individual* is concerned, to supply and keep up the conditions for the exercise of the animal functions. Yet it is no less true in animals than in plants, that the exercise of *organic functions* in them is also attended with decomposition and decay in proportion to their activity. In the young, the tissues are soft, and decay is rapid, and the vital actions are correspondingly active; while in the old the tissues become more firm and permanent, and the vital actions are consequently less vigorous. In the former, the repair of injuries is rapid, and if the cause of disease be removed, the restoration to health is quick and entire; but in the latter, the structure is firm, decay is slow, the vital energies are correspondingly low, and if there be a restoration, it is tedious and often but partial. From the beginning of life to the end of it, there is a constant relation between decay and life action. It has been considered that decomposition of the muscular and nervous tissues results from their functional activity: if the proposition here advocated be correct, their functional activity results from decomposition and decay, or from forces evolved in this process. A machine of art acts more easily and with less friction when composed of a hard material; while in the organism, as the tissues become more firm the actions are less; hence this must be because there is less force to produce the actions; but there is a constant relation between the decay and the actions of an organism; hence it would follow that the destruction does not result from the action, but the action from the forces evolved in its oxidation. The relation preserved in health between decay and renewal is so constant that it cannot be believed a mere accident. As decay and renewal are directly opposite to each other, they cannot be dependent upon the same cause; hence, as the relation is so constantly preserved, the one must be dependent upon some condition afforded by the other. Now, as the natural tendency of the organism is to decay, and, as there could not be renewal previously to decay, it is most probable that decay affords the necessary conditions to renewal; that is, the very act which creates a necessity for renewal, also evolves the forces necessary for its accomplishment.

"The above proposition seems somewhat plausible, when we consider that the same conditions which are necessary to decomposition and decay, are conditions necessary to life. Under the very same circumstances we have life manifested in one organic compound, and nothing but destruction in another; while, without these circumstances, there is neither life nor destruction in either. Can this be because air, heat, and moisture are conscious existences, and have not the same tendency in the two cases? Can it be that they have in the one case a *deadly*, while in the other a *vitalizing* influence? It would seem not; although vital actions do result from the influence of these conditions in the one case, yet it would appear that this can only be effected through decay; for their tendency to *destroy* and *disorganize* must be the only way through which they exert their influence throughout the organic world. Take a seed, for instance; if it be preserved from the conditions of decay, it will remain unchanged for any length of time; but so soon as the influence of these conditions operates, life is manifested—an act of *organization*, which is directly contrary to the admitted natural influence of these conditions. It is not an object here to define the forces which produce vital action; admit if you please the existence of an independent 'vital principle;' or if you would rather admit that 'matter capable of assimilation was originally endowed with vital properties;' or let there be any hypothesis which may enter into the heart of man to conjecture, the argument is the same; that the forces which produce vital actions, be they what they may, are developed by means of the oxidation or decay of the organism, just as electricity, heat, and light are evolved by the oxidation of zinc. As the external conditions of life are the same as those of decay, the different results must proceed from difference in the substances acted upon; and as the tendency of these conditions is to produce disorganization rather than organization in *all* organic compounds, and as there is decay wherever there is life, decay must be a necessary antecedent to life. But an *organized structure* is so arranged by an Infinite Wisdom, that in the very act of incipient destruction liberates a recuperative

life-force, which, if there be a supply of nutriment, *renews* and builds up the structure, every particle of which is, in its turn, destined to *decay*, and thus acts its part to keep up the actions of the individual."

It is not our intention to follow our author through the various arguments he presents in support of his position—that vital actions are produced in an organism by forces which are evolved in the decomposition or decay of that organism—a mere synopsis of them would not give to our readers a correct idea of their full force and bearing. All that we desire is to furnish a general idea of the views advocated in the essay before us, and of the manner in which their truth is endeavoured to be sustained.

In treating of the condition of a seed before germination, Dr. W. remarks:—

"The phrase 'dormant vitality' is the received explanation at the present time; but I have attempted to show that there can be no such thing as dormant vitality, and, moreover, if there could, that the external agents could not *stimulate* it into action. It is contended that if there be forces in the seed, and there must be, these forces must be in action, though they may not produce action; and that the only way air, heat, and moisture, or any other agents, can produce action in the seed, is either by their additional force or by changing the direction of the existing forces, and thus disturbing the balance. The facts in the case are simply these: A seed may be preserved any length of time without undergoing the slightest change; but, when certain external agents are applied, life becomes manifest. The object is to interpret these phenomena, just as we would those which present themselves in any artificial experiment. This experiment, performed for us by nature, is brought forward in support of the proposition—that *life action is produced by forces, which are evolved*, or take a new direction, *in the decomposition of the organism*. The seed does not possess vitality, in any sense of the word, before germination; it does not even possess *life-force*, either dormant or in action, for life is only produced when it is under the influence of certain external agents, and, therefore, life-force is the resultant of forces as directed by the seed under the influence of these external agents. Therefore, we have life-force only under the cooperation of *all* the conditions of life; but its *components* have existed and been in operation since the foundation of the world, or the creation of matter. Now these *components* are not mysterious agents which never manifest themselves except in organized structures; but the very same forces which produce the *ordinary* chemical actions, when directed by an organism under the influence of these external agents, become the components of life-force. But organization *must* be produced by means of disorganization, because the natural tendency of an organized structure, under the influence of the external conditions of life, is to disorganization; and consequently, organization cannot be *directly* produced by the ordinary forces. But, as no means or ingenuity whatever could make gravitation *directly* elevate a weight, yet, as has been seen in the case of the inclined plane, it may be made to do so *indirectly*, by means of depressing a weight, which is its natural tendency; so no fortuitous circumstance or event could ever make the ordinary forces of matter *directly* produce organization, yet they may produce organization *indirectly* by means of disorganization, which is their natural tendency. From the foregoing considerations, therefore, it is concluded that life *originates* when the seed is placed under the proper conditions, through decay or oxidation, which these conditions naturally induce."

Hybernation the author believes capable of an easy and natural explanation, upon the supposition that life is produced by forces which are evolved in the act of decay.

"As the temperature, which is a condition to decay, diminishes, decay must also diminish; and as the decay of an organism is the means by which life-force is produced, the diminution of decay would diminish life-force accordingly. If the temperature be so much diminished as to arrest decay, life must consequently cease; not in part, but entirely. This state of *death* may continue indefinitely, so long as the external conditions are preserved. But with the return of heat, if the structure have not been destroyed, decay, and consequently life, commence again as in the original germ; and, whereas the animal was *dead*, it is alive again."

With the view of placing before our readers the manner in which Dr. W. applies his doctrine of the development of life-force to the explanation of the origin of organization, we shall extract the greater portion of his remarks on the subject of *Equivocal Generation*. Although the quotation is a long one, it will, we are persuaded, interest, and we hope instruct, all who will take the trouble to peruse it.

"Observation," says Dr. W., "has tended to establish this mode of generation, but it has been rejected upon theoretical views. Those who deny this mode, say, although the entozoa have no prototype in nature, yet germs taken into the system produce different animals, on account of the peculiar circumstances of their position. This is begging the question; for this is itself equivocal generation. That a germ is *necessary* to life is admitted and presupposed in the theory of equivocal generation; yet it has been accustomed to be considered equally absurd with *spontaneous generation*. Reasoning, *à priori*, from the proposition that life is produced by the decay of an organized structure in the presence of a fluid plasma, we are led to suspect this mode of generation, though there might be an inclination, at first, to confine it to plants and animals, consisting of a single, or a very few cells. But when it is considered that all animals and plants are made up of cells, and that the growth of the individual consists in the growth and reproduction, or multiplication of cells, our original suspicion might be somewhat extended. If it be true that the organism is not endowed with any vital principle, or force distinct from its own structure, then nutrition and generation—both equivocal and what is called regular—are involved in no greater mysteries than the ordinary chemical actions; but, upon the theory that there is a germ-force distinct from the forces derived from the matter constituting the germ, then, both regular and equivocal generation are equally inexplicable; for they both seem directly opposed to this theory. Admit it true, for a moment, that the germ derives a certain amount of life-force from its parents; now a force cannot increase of itself, and, if life-force increase with the growth of the individual from the germ, upon what does it feed? The quantity of matter of the body may be increased by additional matter taken in; so, if the force increase, it must be by additional force; but life-force does increase, else reproduction would involve the death of the parent. Now, if life-force be something peculiar and distinct from the forces of the matter that constitutes the organism, whence does the individual derive this additional force? The natural inference is, that it is not distinct, and is derived from the additional matter that becomes organized; and if the additional force be thus derived, why not the original force of the germ also? Hence, the very fact that there is reproduction in any mode whatever, is a strong argument in support of the idea that there is no agent at work in the organism distinct from the agents which produce the ordinary chemical actions; that it is the organism itself that makes the distinction. If it be the independent vital principle that determines the species and its constancy, there could be no deviation from the original type, for an offspring could not have a different vital principle from that which its parent had, and consequently, could not transmit one different from that which it received."

"In considering the above views of reproduction, it would be well first to notice some examples where each generation possesses a distinct individuality, while it is, at the same time, entirely different from that which preceded it—examples where every third, fourth, or fifth, or even tenth generation only, resemble each other, while each generation is distinct and independent. The development of the distoma from the egg is a good instance to illustrate this point. An animal is developed from the egg, named the *grand-nurse*. This animal gives birth to numerous other animals dissimilar to itself; these are called the *nurses*. These, in their turn, give birth to other animals not in the least resembling the generations preceding; these are the *Cercariae*. The cercaria is metamorphosed into a distoma, and now, for the first time, we have an animal resembling those that produced the original eggs. Among the Aphides, it is only after eight or ten generations from the egg, that the perfect animal appears with the distinctions of sex. These examples are sufficient to

illustrate the position, that the development of an animal from the egg is progressive—that the perfect state is arrived at, sometimes at least, through the successive steps of equivocal generations. Various inferences are deducible from these facts, in reference to the subject before us. The first is, that there may be reproduction without the union of the sexes. It is true, some have supposed that there was a superabundance of *speru* in the original egg; that this, being taken up by the young animal, *virified* germs produced by it; that the superabundance still existing, being taken up by these young animals, was similarly appropriated in the production of their young, and so on, for many generations. But this only shows how *facts* are twisted to reconcile them with theories. The simple facts would seem to indicate that there was no spermatie influence except in the original egg; that the grand-nurse itself affords conditions for the origin of the nurses; and that the nurse itself gives origin to the germs of cercariæ; that the distoma is developed from the cercaria; and that the union of the sexes in this state gives origin to the eggs. Again, upon the theory of a peculiar vital agent, there could have been but one in the egg; say this produces the grand-nurse, if you please; now the grand-nurse, possessing but one vital agent, gives birth to an immense number of nurses, of course, each possessing an independent *vital agent*; now, each one of these nurses, possessing but one vital agent, gives birth to an immense number of cercariæ, of course, each possessing an independent vital agent. Also, the more complex animals are composed of an innumerable number of cells or organisms, which are only dependent for their action upon those external conditions which life action in general is; but the original germ, from which the cells composing the complex animal were developed, could have possessed but one vital principle. The important question here is, where did all these independent vital principles come from? They could not be produced by the subdivision of the original one in the egg or germ-cell, supposing such a thing possible; for each successive generation is carried to a higher state of development than the former, which could not be the effect of a *part* of a *vital principle*. But suppose, for a moment, that a vital agent does exist in each of the cercariæ which are finally developed from a single egg, that they do originate in some way, no difference how; all these must be of the same *kind*, at least, as the one which developed the grand-nurse from the egg; for, if it were admitted possible for the vital principle to multiply indefinitely, it would still seem impossible that it should change its character. So, admitting the existence of a vital principle, it is necessary to admit also, that the peculiarity of the individual is not dependent upon *it*, but upon the peculiar organization of the germ itself; for, if the *same agent* produces at one time a *grand-nurse*, then a *nurse*, and then a cercaria, animals entirely different, the difference must necessarily result from the peculiarities of the material acted upon. Hence, though all animals have a single cell for their common origin, yet the peculiarities in the structure of the future animal, are entirely dependent upon peculiarities in the composition of the germ itself. The constancy of species, therefore, is not dependent upon the vital principle, admitting one to exist, but upon the constitution of the germ itself. Hence, the dumb agents which produce the ordinary chemical actions, when directed by the germ, could produce all the vital actions as well as an *intelligent* vital principle, if the exercise of *intelligence* is unnecessary.

“But it may be objected that the foregoing argument is irrelevant; for, we do not know the nature of the *vital principle*, and, therefore, should not argue upon it as if it were analogous to anything we do know. This objection would put a stop to all investigation; for it is always necessary to reason from the known to the unknown. Whatever it may be which produces life, it certainly does not only resist decay, but produces actual organization; therefore, it is a force. If it be a force, it must possess all the properties of force in general, and must be reasoned upon accordingly. As force cannot be created or destroyed, *life-force*, therefore, is but a peculiar combination of forces which have existed since the creation, as *organized* matter is but a peculiar combination of matter which has existed since the creation.

“Perhaps it would be well now to notice the development of vertebrate ani-

mals, and see what analogy exists between their steps towards maturity, and those of the distoma and aphides just considered. First, notice the formation of the germ itself. In the evolution of the spermatozoa, suppose that the 'parent-cells' are evolved immediately from granules which are secreted by the tubuli seminiferi; these parent-cells give birth to the 'vesicles of evolution,' and die themselves; the 'vesicles of evolution' give birth to the spermatozoa and die themselves. Thus, the development of spermatozoa from granules secreted by the tubuli seminiferi is precisely similar to the development of the distoma from the egg. The evolution of the ovum from the ovisac is the same. It is the received opinion that the germ-cell is formed by the union of the spermatozoa with the ovum. While this union gives origin to the *germ* of a new being, independent vitality existed prior to it, as is indicated by the evolution of the spermatozoa and the ovum. All this is just what would be expected, if we admit the proposition that *life-force is the resultant of the ordinary forces of matter as they are directed in the decay of the organism*. But our observations must not stop here; we now have the 'germ' of a new being. All animals and plants have their origin in a single cell. This germ-cell is not a miniature of the future animal; it has not a backbone with a spinal cord having a ganglionic expansion; it has not an alimentary canal, liver, kidneys, and a pulsating heart; it has not muscular and nervous tissues with organs of locomotion. Yet it is all that the parents contribute to the production of a new being, which, after a long series of progressive steps, acquires all the peculiarities of its species, having all the organs necessary to organic and animal life. The diversified cells which compose the various tissues and organs of the fully-formed animal, must be produced by equivocal generation, as they did not exist in the germ. While the *animal*, through its various changes, maintains its distinct individuality, its elementary structure is undergoing the changes of equivocal generation, just as if, in the evolution of the distoma, the 'nurses' should not separate, but continue together so far as to constitute but one individual, and the cercariæ, to which these 'nurses' give birth, should continue in the same individual and constitute part of its structure. Thus, the animal would undergo various metamorphoses; but would not at any time lose its individuality. So far as observation has gone, it tends to establish the view here taken; that the various changes which the embryo undergoes in its development, are due to equivocal generation of cells constituting it. An animal is a compound organism made up of tissues which are composed of cells. The animal, therefore, would change with the cells; these cells are very diversified in the fully-formed animal, but they all originated in a single germ-cell. Now each cell which enters into the composition of the most complex structure, is an independent organism as much as if it were separate; its actions are only dependent upon the same conditions that life action in general is. It is plain, therefore, that it is just as reasonable *à priori*, that the various cells composing a fully-formed animal should be evolved by equivocal generation, starting from the germ-cell, as that the distoma should be evolved by equivocal generation, starting from the egg; and, if we reject the theory of a peculiar vital agent, there is nothing, *à priori*, against either. The original germ only affords conditions for the *first* act; that act of the germ affords conditions for the next, and so on continually; so that there is a continual progression from the original cell to the fully-formed animal, each act affording the conditions for the next: 'the present is the offspring of the past and the germ of the future;' break one link in the chain, and the whole machinery is destroyed. Metamorphosis, therefore, is only the change of form which the individual undergoes on account of its elementary structure being changed by equivocal generation.

"If the above view be true, it is evident that the *material* determines the *form* as well as the vital actions. The *material* is all that the parents contribute to the production of the germ, and, consequently, to the production of a new being. Vitality does not *originate* with the germ-cell. The germ-cell is the *effect* of vital action; and vital action too entirely independent of the parents. The epithelial-cells of the tubuli seminiferi are *part* of the parent, but the material which they secrete is *independent*; and, though in this condition it appears formless, and does not show any sign of life, yet this is all the parent contributes

in reproduction. The changes which take place after are entirely independent of the parent. When this secretion is under the influence of proper conditions, the 'parent-cells' appear which commenced with the change of *material* produced by these conditions; the forces thus evolved carry the *interior* to a higher state of organization. When this material thus prepared is under the same influences, life action and cell growth commence in it: and 'vesicles of evolution' are produced. These prepare the material from which the spermatozoa are developed. The spermatozoa and the germinal vesicle of the female mingle their contents, which *material* is the foundation of a new being. This view is confirmed, not only by the fact that the ova of some animals are fecundated after their expulsion from the body, but also by the fact that the spermatozoa of some animals are developed after the ejection of the seminal fluid. A good illustration is also found in the development of epithelium-cells from a formless material—the *basement-membrane*. It is true cells are sometimes partially developed within other cells, but the parent-cells only furnished the material or germs and a nidus for their early development, as the womb of the mammal only furnishes a convenient place for the early development of its young.

"But not only is *reproduction* accomplished by means of equivocal generation, but it would seem that nutrition is also. Formerly, all actions which take place in the system were referred to the *vital principle* to the exclusion of chemistry; now, certain actions, such as digestion, are found to be chemical, and straight-way their vitality is denied. Vitality is not incompatible with chemistry, and why may not the same action be *both* vital and chemical? An action is no less chemical because it takes place in the body; it is no less vital because it can take place out of the body, when those conditions which are supplied in the body are supplied out of it. Digestion is now considered *purely* chemical; this does not prove that it is not at the same time *purely* vital. If the proposition be true, that *vital actions are produced by forces which produce the ordinary chemical actions, as they are directed in the decay of an organism*, all vital actions are *purely* chemical actions. As the same force which gives motion to machinery of man's construction, as the water-wheel, the clock, &c., in the hands of the Almighty causes the apple to fall to the earth, and regulates the planets in their orbits; so, the same forces which cause the ordinary chemical actions, in the laboratory of Nature, give life to the lichen, rear the gigantic oak, and build up the wonderful structure of man.

"It is not contended here that in nutrition each new cell is not, as a general thing, similar to the one whose place it supplies in the tissue, more than it would be that the offspring is not similar to its parents. But this is the goal of assimilation arrived at by successive alternate or equivocal generations, starting from certain nitrogenized compounds or germs in the alimentary canal and lymphatic system; just as an independent individual, similar to its parents, is the goal of reproduction arrived at through successive alternate generations, starting universally from a single germ-cell. When air, heat, and moisture are applied to a seed, decay commences, life-force is produced, and germination is the natural consequence. If a seed be ground to powder, and air, heat, and moisture applied, each separate particle of the germ, in its decay, would evolve life-force as much as if the seed had been left entire—as is observed in fermentation; but, as the force of all the granules is not concentrated as it would be in the perfect seed, there is not produced an individual plant similar to the one which produced the seed. As the formless material secreted by the epithelial-cells of the tubuli seminiferi, contains germs of cells from which are evolved, by equivocal generation, the spermatozoa; so, the formless material secreted by the glands emptying into the alimentary canal, contains germs of cells which commence the wonderful process of converting an aplastic into a plastic material. The fact that digestion can take place out of the body when the gastric juice is furnished, is no argument against its being a vital action, for the conditions of *life* are a germ, a fluid-plasma, air, and heat, and it matters nothing *how* these may be furnished. If it were possible to supply all the conditions artificially, life would result no less than if supplied by nature; but, as the natural tendency is to decay, and life is produced by the decay of an *organism*, the germ *cannot* be produced except by a previously existing organ-

ism. If the germs be furnished by *nature* and the other conditions by art, the actions which follow would be the same as if all were furnished by nature. Therefore the fact that the gastric juice will dissolve food out of the body, does not prove it not a vital action; though, if our proposition be true, it is chemical also, as well as all other vital actions. Coagulable lymph is effused in a fluid state: soon cells begin to be formed, and after a time they are united and form a solid tissue; so the secretions which are discharged into the alimentary canal would be expected to be fluid, though they contain germs needing only proper conditions to be speedily developed into cells. These cells are not similar to the epithelial-cells which produced the germs, therefore they are equivocally generated, as are the epithelial-cells themselves; for they are not produced by epithelial-cells, since the *basement-membrane* has a different origin. Thus the process of nutrition, as well as reproduction, commences from germs secreted by epithelial-cells, and is a process of equivocal generation."

From the foregoing extracts, some idea will be derived of the doctrine of organic or life-force advocated by Dr. Watters, and of the general scope of the arguments by which that doctrine is enforced. Many views of a highly interesting character are presented by him, either arising out of his leading proposition, or adduced as additional evidence of its correctness, which we have not noticed; the true value of these cannot, in fact, be well appreciated, excepting they be studied in the order and connection in which they occur in the essay before us. To such of our readers as feel an interest in one of the most obscure questions in physiology, we recommend a careful perusal of the entire essay, which we understand is for sale by the publishers. Dr. Watters has, we believe, pointed out the leading proposition that, in its more full development, will be acknowledged to constitute the true doctrine of vitality.

That the doctrine, as presented by our author, is unattended with difficulties, we are not prepared to admit. We feel inclined to object even to the terms in which his leading proposition is expressed. Without denying that life or the actions of an organism, are the result of forces evolved in the reciprocal action upon each other of the materials entering into the composition of the organism; that this reciprocal action is precisely the same as takes place in inorganic matter; that the one form of matter is subjected to no influences from which the other is abstracted;—without denying that the difference in the phenomena produced in the two cases is solely dependent upon the particular arrangement and combination in which matter is present in the organic state, and the absence of that arrangement and combination in its inorganic condition;—admitting also that its capacity for the development of life-force may be destroyed by the change produced in organic matter from the reciprocal action upon each other of its constituents—by their chemical change, if you please—it must be evident that this decomposition or decay of the organism is as much an effect of the actions by which life-forces are supposed to be evolved, as are those forces themselves. Hence we conceive it to be incorrect to say that the latter are evolved in or by the decomposing or decay of the organism, both being equally effects of the changes that take place in the condition of the matter constituting the organism.

The form of expression made use of by the author is, in fact, often defective, even where the idea intended to be conveyed by him has all the characteristics of truth.

D. F. C.

ART. XXIII.—On *Syphilis*, *Constitutional and Hereditary*; and on *Syphilitic Eruptions*. By ERASMUS WILSON, F.R.S. London, 1852: 8vo. pp. 235.

THE subject of syphilis has attracted attention in proportion to its diffusion and importance. Since Mr. Hunter devoted his rare powers of observation and generalization to its elucidation, the disease has been most zealously and successfully investigated by a host of able men; so that the modern literature of this speciality is now quite as extensive as that of any other. There are several

points, however, which are still more or less obscure: and to some of these Mr. Wilson, with whose scientific attainments and general qualifications for conducting such studies our readers are all familiar, has devoted a portion of his time. The peculiar effects of constitutional syphilis, as manifested in the development of cutaneous eruptions, have occupied the larger part of his attention.

We shall give a brief sketch of the contents of the volume.

The first chapter considers the characters and peculiarities of the syphilitic poison.

The *common* mode of transmission of the poison, the author remarks, is through the agency of a morbid secretion poured out upon the surface of a syphilitic sore: this secretion being saturated with the poison. An abraded surface presents, of course, the most favourable conditions for rapid and certain contamination; but, as Mr. Ceely has demonstrated with regard to the vaccine virus, such an abrasion is by no means necessary, the poison of syphilis as well as of the vaccine disease being capable of being absorbed from an unbroken surface, provided it be retained upon it a sufficient length of time, and in a sufficiently moist state.

Mr. Wilson contends that there is still another method by which syphilis may be, and often is communicated to a previously healthy person: "It is that in which a man or a woman having been contaminated by the poison, and having been, to all appearance, cured of the consequent disease, has, nevertheless, become so saturated with the virus, as to possess the property of communicating syphilis to a sound person, by means of his secretions. This mode of transmission is so important that I will proceed to illustrate it by means of cases which have fallen under my observation;" (p. 3.) One of these cases will serve as an example. We will take the first. A gentleman had a small venereal sore on the prepuce, in the month of November; it got well speedily. In the succeeding February, he had sore-throat and rheumatic pains, slight in character. In March, he married. In the following June, a furuncular abscess appeared upon the upper and inner part of one of the thighs of the wife, which left an exceedingly obstinate sore; moreover, a rash showed itself upon the skin. These symptoms, under a modified treatment, disappeared; but subsequently a few pimples broke out upon her body; she had a feeling of soreness in her throat, but without congestion; her skin was muddy and discoloured; and her husband had an attack of iritis. The furuncular abscess, Mr. Wilson considered as of the common kind; but its indisposition to heal, and the breaking out of the eruptions, he attributes to the contamination of the wife's system by absorption from the syphilis-tainted urethral or seminal secretions of the husband. He remarks also in connection with another case, "The question of the liability of a healthy woman to become infected with syphilis by a nurse-child, I hold to be a fact beyond the reach of doubt." The instance which he cites to prove this is, undoubtedly, as strong a one, apparently, as could be presented. But it may be fairly objected to the validity of the first case, that we have no assurance that the husband had not a chancre, at the time of his marriage, which was capable of communicating the disease to his wife; and the only evidence as to the immunity from syphilis, primary as well as secondary, of the two women who acted as nurses, in turn, to the child, in the second instance alluded to, is the assurance by the physician who reports the case, that they were *respectable married* women, and that the husband of one of them "was perfectly free from any trace of venereal disease." The nature and accuracy of the examination instituted by the physician to place this fact beyond suspicion are not mentioned. Now, it would have been very easy, and much more satisfactory for the argument's sake, for Mr. Wilson to have tested by *direct inoculation*, whether the secretions from the skin and other parts of persons suffering under constitutional syphilis, are really capable of inducing the disease. But the author has recorded no such experiments; indeed, he says that, "No experiments in the world can shake the force of the conclusions" which he derives from the cases which he records, and others like them: (p. 14.) We do not think that these are by any means conclusive; they are all open to the grave suspicion that primary symptoms existed at the very time, and cannot be admitted to set aside the rigid analysis and the positive experiments of John Hunter, Ricord, and other intermediate investi-

gators, which have made it almost, if not wholly, a matter of demonstration, that constitutional syphilis is not contagious.

It is well known that many surgeons admit that *gonorrhœa* may give rise to secondary symptoms. According to Ricord and his disciples, this can only occur when there is a *chancre* at some point which permits its specific secretion to mingle with that of the inflamed mucous membrane. But Mr. Wilson explains the phenomenon upon the ground of the contagiousness of constitutional syphilis. He says (p. 19), "The recognition of the contagion of constitutional syphilis, a fact too obvious to admit of a moment's hesitation, will go far to explain a circumstance which must have fallen under the observation of every unprejudiced investigator of the syphilitic poison and its manifestations, namely, the occurrence of syphilitic eruptions and other symptoms of constitutional syphilis after gonorrhœa. When we see a man perfectly free from any primary symptoms of disease, communicating syphilis to his newly-married wife, by his secretions alone, can we doubt the possibility of a similar result accruing from a syphilitic secretion poured out by the mucous membrane, as happens in gonorrhœa? I do not say that every gonorrhœa is syphilitic; on the contrary, I know that few are so, but those few have as much the power of transmitting syphilis as an undoubted chancre." And, in continuation, he gives the case of "a medical man who had gonorrhœa, but neither excoriation nor sore:" after exposure to great inclemency of the weather, however, he was attacked with rheumatic fever, eruption on the skin, and iritis. Ten years afterwards, he again suffered from gonorrhœa; and subsequently another series of constitutional symptoms appeared. Yet, notwithstanding the ease with which certainty might have been arrived at in this case, viz. by the inoculation of some of the gonorrhœal discharge, and only by this process, this mode of diagnosis is neglected, and the nature of the local affection is permitted to rest upon the assurance of the medical man, "that he felt convinced that he could not have had a chancre in the urethra." If the *secretions* in constitutional syphilis are to be considered as possessing contagious properties, then, as Mr. Hunter argues, much more must the *blood* be regarded as poisonous; and consequently, "no person that has this matter circulating, or has the lues venerea, could escape having a venereal sore whenever he is bled or receives a scratch with a pin, the parts so wounded turning into a chancre." (Palmer's ed. of Hunter's *Works*, Philad. vol. ii. p. 239.)

In the second chapter on "primary syphilis," the views entertained by the most authoritative writers are adopted, and briefly stated. With regard to the much discussed question, as to the cause and nature of the specific induration of chancre, Mr. Wilson is of the opinion that this condition "is itself a manifestation of constitutional action; in other words, the induration is a constitutional affection superadded to the primary disease." p. 27. This view coincides with that which is so well advocated by Ricord in his *Lettres sur la Syphilis*, Paris, 1851, 19th letter, in which he says that the indurated chancre is to syphilis what the true variolous pustule is to variola; what the genuine vaccine pustule is to vaccinia; the evidence, namely, of constitutional implication. And he further states that, "as a general rule, a patient who has once had an indurated chancre, never has another."

In the third chapter, the author points out the analogies and the differences between the peculiar form of fever, or constitutional reaction, which follows upon the introduction of the syphilitic virus into the system, and the exanthematic fevers. He considers that "this inflammatory movement, or syphilitic fever, is a sign of the accumulation of the poison within the blood, to such a degree as to disturb the healthy functions of the body, and is attended with symptoms which indicate derangement of the nervous, vascular, and digestive systems, and especially of those surfaces of the body through which it is possible for elimination to occur:" (p. 30.)

But numerous as are the points of resemblance between the syphilitic and the exanthematic poisons, in their respective manifestations upon the system, the differences are even more striking. And these discrepancies Mr. Wilson ascribes to a radical difference in the nature of the poison. The virus of measles, scarlatina, and smallpox, originates in conditions extraneous to the system;

it reaches the blood as an agent foreign to its nature, and immediately upon attaining the point of saturation it excites an explosive effort for its elimination, under certain regular laws of sequence and time: and after the poison has once been entirely thrown off, the system usually enjoys an exemption from subsequent contamination. The syphilitic *materies morbi*, on the other hand, originates within the body, and "is probably little more than a modification of the natural secretions: it is consequently less irritant in its nature, and it tends to assimilate with the blood, and with the tissues, rather than to excite an action which may result in its removal. Hence the poison is slow in accumulating, its excitation of febrile symptoms seems rather a matter of accident than the consequence of an irresistible law: the patient enjoys no immunity from a recurrence of the morbid action, and the poison is only partially removed by the febrile effort:" (p. 34.)

In the succeeding hundred pages, the progress of the disease is studied and explained in accordance with this view, its different phases being regarded more or less in the light of so many efforts made to rid the system of its implacable and murderous invader. Accordingly the various forms of the diffused cutaneous eruptions are described, as well as the more local implications of special parts or tissues.

The peculiarity of Mr. Wilson's views appears, if we understand him aright, to consist in his explaining all the seemingly varied eruptions by virtue of a mere modification in the form and degree of the congestion of the skin. Thus he says that the syphilodermata present two principal forms, the one being simply congestive and unattended with elevation of the skin; the other presenting an obvious elevation. To the former group belong *roseola*, the *maculae*, and *erythema*; to the latter the *papulæ* of lichen, and the *tuberculæ*. But these differences, he admits, are more apparent than real, and may be looked upon as stages of development of the same disease. *Roseola*, by an easy gradation, is converted into lichen, or tubercular syphilis, and these latter, by simple subsidence, become syphilitic *maculae*. His classification of the eruptions is very simple, these being only three in number: "1, simple congestion of the skin, constituting *Roseola* and *Erythema*; 2, congestion, with elevation of separate follicles, constituting *Lichen*; and 3, congestion, with elevation of a small group of follicles, or uniform tumefaction of a small portion of skin, exceeding two lines in diameter, constituting *Tubercula*. These may be considered as typical examples of cutaneous syphilis; and all the numberless modifications which are met with in practice may be referred to one or the other of the above three heads:" (p. 42.)

We shall not enumerate all the subdivisions, although they are not very numerous. They are amply described in the text, and illustrated both by numerous cases and by beautiful drawings. Thus it will be seen that the diagnosis of the syphilides is materially simplified by the author. Whether he is right or not, we do not pretend to say; but his thorough investigations into the anatomical and physiological peculiarities of the skin, certainly give great weight to his opinions, and incline us to adopt his views.

The chapter on *Congenital*, and *Hereditary Syphilis*, are exceedingly interesting, in some respects, and are amply illustrated by examples from the author's clinical experience. He seems firmly impressed with the conviction, from his large observation, that many of the intractable and dangerous forms of cutaneous disease are of syphilitic origin, and he especially enumerates *scrofula* and its various manifestations, as also *lupus*, *kelis*, *lepra*, and *psoriasis*. We are not by any means prepared to admit such a sweeping conclusion as this; nor do we see anything in the circumstances of the cases cited by the author as illustrating his views, which are calculated to elevate the latter above the character of loose and vague conjectures, such as men are too apt to invent, when speculating about subjects which have occupied much of their time and regard. Indeed, the author advances it as an hypothesis hereafter to be established, rather than as a settled fact. We suspect it must ever remain a mere matter of speculation.

The *treatment* of syphilis receives its due share of attention in the concluding chapter.

First, as to the *prophylaxis*. Inasmuch as it is necessary to the occurrence of infection that the virus shall remain a certain length of time in contact with the mucous membrane or with the skin, the most obvious method of guarding against the absorption of the poison is to wash the parts carefully and thoroughly. Mr. Wilson advises that the male should wash with *soap and water*, and that the female, in addition to the use of the same externally, should inject the vagina with weak vinegar and water, and subsequently bathe the external parts with a similar lotion. These operations should be performed with great care, to insure thorough removal of the virus from the numerous folds and follicular orifices. "Acids and alkalies possess the power of destroying the poisonous qualities of the syphilitic poison;" but in order that these fluids shall exert their power, they must be brought in contact with every lurking atom of the virus, for so subtle and powerful is the latter that, according to Mr. Acton (Am. ed., p. 238), "one drop has been diluted with a pint of water, and the inoculated fluid has produced a pustule." If there be an excoriation upon the surface, it should be lightly touched with nitrate of silver, and covered with lint.

The *curative* treatment divides itself into the local and the general.

If a patient present with a papule, a pustule, or a small ulcer, which has just appeared, this should *immediately*, and whether there be any doubt of its specific character or not, be touched with some caustic application, "with the double view of destroying the morbid structure of which it consists, and of setting up a new and healthy action, in place of the poison-generating one already in existence or about to begin;" (p. 189.) In the choice of a caustic, says Mr. Wilson, "I have long given the preference to *potassa fusa*; with it the destruction of the tissues is effected totally, and the extent of destruction may be regulated with the utmost nicety. The *potassa eum calce* (Vienna paste) comes next in the list of preference; then chloride of zinc, which is objectionable on account of the pain to which it gives rise; then follow nitrate of silver, nitric acid, and the actual cautery, all of which I consider to be perfectly useless. If a patient were to tell me that his surgeon had cauterized the primary affection within an hour of its first appearance with the nitrate of silver, I should consider him as certain to have constitutional syphilis as if the sore had been left to itself," &c. After the cauterization, he advises the application of a piece of lint moistened with a solution of the watery extract of opium (5j of ʒiv), and over this the common tepid water dressing; rest, and support of the organ, in the male, should be enjoined; attention should be also paid to the condition of the skin and digestive organs.

If the primary affection be not seen until a few days have elapsed, "constitutional treatment is most necessary and most important." The indications of treatment he considers to be: 1, "to prevent the increase of the poisonous ferment in the blood," and 2, "to cause the removal by the natural excretories of the body of the noxious poison, as rapidly as it may be formed." To fulfil the latter indication, he regards "*Mercury*, of all the known remedies for syphilis, as that which has for the greatest length of time maintained its character and warranted the confidence of medical men; and for the simple reason that mercury alone possesses the power of acting upon all the excretories of the body; it excites action in the bowels, the liver, the kidneys, the mucous membrane, and even in the skin; mercury, then, deserves to be considered the great antidote of syphilis." Of the different preparations of this drug, Mr. Wilson prefers the *blue pill*, where it can be procured perfectly pure, in from two to five grain doses, to be taken for the first five or six days at night only, and afterwards night and morning. He regards it, however, as inapplicable to the treatment of the inflammatory and phagedenic sores; "these must be treated according to the common principles of surgical medicine."

It is not necessary that we shall follow the author in his details of the treatment; we shall merely remark that in these he displays his usual caution and judgment in the enforcement of his particular views.

In the treatment of the manifestations of the *chronic forms* of syphilis, the *tertiary* period of Ricord, mercury he considers to be decidedly injurious, and employs the iodide of potassium, cod liver oil, Donovan's solution, &c.

In conclusion, we take pleasure in observing that, although we have not been

able to agree with the distinguished author in some of the views which he has advocated in his book, we yet commend it to our readers as unfolding new views of syphilis in many of its aspects, and as containing many simple and satisfactory aids in its diagnosis and treatment. The text is illustrated by four exquisitely finished plates, which exhibit very well the characteristic appearances of many of the syphilides. Our readers are doubtless familiar with the illustrations accompanying Mr. Wilson's book on *Diseases of the Skin*, published some years ago; and it is only needful for us to say that the plates belonging to the volume under notice are executed in the same artistic manner as were those.

We understand that Messrs. Blanchard & Lea are preparing for the press a reprint of this book: and that it is their intention to spare no labour or expense to render the American as nearly as possible equal in excellence to the English edition.

F. W. S.

ART. XXIV.—*Ueber secundäre Erkrankung einzelner Rückenmarksstränge und ihrer Fortsetzungen zum Gehirne.*

A Consideration of the Secondary Degeneration of Particular Fasciculi of the Spinal Cord, and their Continuation to the Brain.—Transactions of the Imperial Academy of Science, Vienna, Vol. VI. part 3, 1851.

THIS is the title of a very curious and highly interesting memoir read before the Austrian Imperial Academy of Sciences, by Dr. LUDWIG TURCK, and printed in the third number of the sixth volume of their *Transactions*. (1851.)

The author states that he has found a peculiar pathological alteration of the spinal cord subsequent to disease of the brain, which consists in a deposit of numerous granular cells upon the side of the spinal marrow opposite to that portion of the brain in which disease has originated; and that he had communicated these observations to the "Society of Physicians of Vienna," in the year 1850.

It since occurred to him that this fact might be constant in regard to particular fasciculi of the spinal marrow, without involving the entire structure of the cord, in which there was an alteration of tissue. Induced by such conclusions, Dr. Turck commenced a series of careful examinations, by which he became convinced that particular fasciculi were always secondarily diseased, depending upon that point of the brain or spinal marrow which was the focus of morbid action: such fasciculi only becoming altered as were in direct connection with these diseased points; and that thus information was attainable relative to the origin and office of such fasciculi.

The manner of procedure was as follows: after the spinal nerves had been exactly counted to establish the precise portion to be examined, the cord was horizontally divided by a pair of sharp scissors, and the stump obtained in this way turned upwards, and its exact contour, as well as that of the gray matter, delineated with precision. Next, from a very small portion of the horizontal surface, a thin layer of medullary matter is removed by a pair of delicate scissors curved at the point; this portion of the surface selected for examination being marked on the magnified drawing, previously made, of the entire section. The fraction removed is then subjected to the most accurate microscopic scrutiny, and the result written down under a letter of the alphabet, corresponding with a letter assumed to distinguish the same relative point on the previously delineated plan: this was continued until the entire surface had been thoroughly examined. Dr. Turck contends that the formation of granular cells is not a propagation of the abnormal condition from the point of disease, but the consequence of the loss of function in fibres which no longer receive those impulses requisite to continue them in the discharge of their duties; and as in other structures, the loss of function involves a degeneration of tissue, the fibres of nerves no longer conveying the currents of nervous excitation degenerate in obedience to a universal law. In evidence that these granular cells are not

propagated from a diseased point, Dr. Turek has never observed them earlier than six months after the occurrence of disease in the nervous centres, and then not in a decreasing ratio from such a point; but he has known the spinal marrow remain in apparently perfect health, while the walls of an effusion were thickly covered by these abnormal products, and upon their subsequent appearance he has seen them select certain portions of the spinal cord, as for instance, just above the origin of the plexus of the lower extremities, to appear in much greater intensity than nearer the seat of disease.

Paraplegia offers a good example of the course of this degeneration of structure, the granular cells being found in such cases in large numbers at the seat of injury, from whence they diminish rapidly, till, within a short distance, they are entirely confined to the exact outline of individual fasciculi, in which they mount upwards as far as the pons Varolii. These were in no instance the same fasciculi in which a deposit was found secondary to disease of the brain; the latter fasciculi remaining in paraplegia entirely free, from the circumstance (deduced from these observations) that these fasciculi, having a different office to fulfil, only sympathized with disease at points from whence they derived their functional power. Upon the occurrence of effusion into the spinal column, for instance, a deposit of granular cells must, after a time, ensue, in consequence of the abrogation of function of the various fasciculi composing the cord, either above or below the point of disease regulated by the employment of these fasciculi; those devoted to the conveyance of centripetal currents degenerating above the point of effusion, and those used for centrifugal purposes below. The fact of these fasciculi being centripetal or centrifugal, being derived by *à posteriori* reasoning from the observance of constant deposits within their walls.

With reference to a very natural conclusion that these granular cells would be produced in an exuded fluid, observation teaches that the smaller capillary vessels of a part, those that would naturally take important action in the production of such a pabulum, are comparatively free from the presence of these abnormal products: while the larger vessels have granular cells congregated around their external walls, as a thread is converted to a similar purpose when suspended in a saline solution, and becomes a fixed point for crystalline deposit. Another argument against these results being the product of exudation, is the fact of the exact limits to which they are restricted in being confined exclusively to individual fasciculi; and as Dr. Turek has never observed the slightest vestige of inflammation, it would seem that these abnormal cells were rather the consequence of anomalous nutrition, or a product of decomposition in structures no longer required to discharge a previous function. Dr. Turek states that he has seen cases in which the distribution of cells exceeded the limits that a strict accordance with the above conclusions would have prescribed for their occurrence; for such a condition he confesses himself at present unable to account.

Now, instances of this kind are very far from being a defect; for they disarm the opposition which novel representations are always apt to excite, of the weighty accusation that the entire explanation afforded is rather the result of preconceived theoretical direction of mind coercing observation, than an honest exposition of fact; it being an inherent attribute of theorists to prescribe for all cases a solution, instead of waiting for truthful observation to offer amendments.

The granular cells increase in size in proportion to the long continuance of disease, and are often a precursor of atrophy; a result which Rokitansky mentions as occurring in certain portions of the nervous system secondary to local affections, and on one occasion he witnessed the loss of an entire hemisphere.

These cells are soluble in ether; and in a high grade of disease exhibit the presence of free globules of fat.

The following is a translation of the *résumé* which Dr. Turek has made of the deductions which he drew from his examinations; and embodies everything of value that could be condensed from details of observation and processes of reasoning, given at length in the original paper in the *Transactions of the Imperial Academy*. This *résumé* is now presented, accompanied with his

method of procedure, to American observers, to receive that consideration which its merits may demand; and, free from the cliques and jealousies of rival European schools, it is for them to decide upon its worth—to engraft upon it the results of their own labour should the stock prove good, and to reject it if, upon a more thorough acquaintance, it should be found without value; in either case, having first weighed the question with a steady hand in the scales of justice.

1st. When, owing to protracted disease in the brain or spinal column, the nervous currents, through certain fasciculi, remain for a length of time interrupted, these fasciculi, in consequence of the abrogation of their office, have produced within them numbers of granular cells; these represent the beginning of a more complete metamorphosis, to be perfected after a further lapse of time.

2d. When in such cases, transverse sections are made through the spinal marrow, medulla oblongata, pons Varolii, and the brain and its ganglia, and those points which are shown by the presence of abnormal cells upon these sections to be diseased are compared with reference to their position, we are enabled to pursue the anatomical track of these secondarily diseased fasciculi, and to arrive at conclusions with regard to the course of nervous currents. The results which follow agree in part with the previous views of the direction of nerve-fibres, and are partly such as could not be reached by anatomy and physiology alone.

3d. A fasciculus of the spinal marrow descends from the *crus cerebri*, continuing through the longitudinal fibres of the pons Varolii and pyramid of the same side, until, reaching the decussation of the latter in the medulla oblongata (in one case in two fasciculi), it passes over to the opposite side, and descends almost to the extreme end of the spinal cord, constituting the posterior half of its lateral column. This we designate the “pyramidal track of the lateral column.”

4th. The “pyramidal track of the lateral column” conveys a centrifugal current proceeding from the *prominentiæ lentiformes*, *corpora striata*, optic thalamus, and medullary matter of the *cerebrum* (of which it cannot be said with certainty that it is a motor impulse), towards that side of the body opposite to the diseased half of the brain, but to the same side on which the fasciculus conducting this current is placed in the spinal column. This track is found to be diseased secondarily throughout, in cases of chronic apoplexy and other encephalic affections.

5th. A second fasciculus proceeds from the *crus cerebri*, and through the pons Varolii of the same side, as longitudinal fibres; but, instead of crossing in the medulla oblongata, as was the case with the preceding pyramidal track, this second fasciculus descends on the same side of the spinal cord as an internal division of the anterior column. Where, however, its secondary affections terminate rather higher than those of the posterior section of the opposite lateral column, this we call the “enveloping track of the anterior column.”

6th. The “enveloping track of the anterior column” conveys an impulse in a centrifugal direction to that side of the body opposite to the disease of the brain, and likewise opposite to the conducting track of the spinal marrow; and brought from the *prominentiæ lentiformes*, and *corpora striata*. This track, probably, conveys a motor impulse, and it is found secondarily affected when disease exists in one or both of the last-mentioned ganglia of the brain.

7th. With the exception of the above-mentioned tracks, neither the gray matter, nor any other of the fasciculi was found diseased secondarily to affection of the brain.

8th. It is not decided whether the motor impulses, proceeding from the *cerebrum*, are conducted downwards through these two above-mentioned tracks alone, or seek some other way.

9th. The internal section of the posterior column continues through the soft fasciculi of the *crura*, and appears to reach its final termination on the floor of the fourth ventricle. By this track a centripetal nervous current is conducted, and it is found secondarily diseased above that point in the spinal cord at which effusion has destroyed the conducting power and arrested the centripetal stream.

10th. A second likewise centripetal tendency is found in the posterior half of the lateral column, and consequently a deposition of granular cells within this track above a point at which an affection of the spinal cord may have occurred. In this posterior half there is both a centripetal and centrifugal conduction. The fasciculi united in the posterior half of the lateral column separate in the medulla oblongata, the centrifugal coming from the pyramids, whilst the centripetal in the medulla directing itself always more backwards mounts to the corpora restiformia.

11th. With the exception of the centripetal tracks mentioned in number 9 and 10, neither the gray matter nor any other fasciculi of the spinal cord were found secondarily diseased.

12th. Whether through these two tracks the sense of muscular tonicity or ordinary sensation is manifested remains at the present unascertained.

13th. The remaining fasciculi of the spinal cord are to be considered as separated in their anatomical and physiological character from those that have been treated of above. In the first place, the separation in the cervical portion of the spinal marrow exhibited between the external and internal sections of the anterior column by the sulcus intermed. anterior, is established as a complete division of those parts extending to the lowest extremity of the spinal cord. The same is probable with regard to the separation of the posterior column into two lateral sections by the sulcus intermed. posterior, although this is only demonstrated so far as the fourth thoracic pair of nerves. A similar division is found between the anterior and posterior sections of the lateral column, not exhibited, however, by any external mark of separation. Each half, therefore, of the spinal cord includes six fasciculi. Secondly, it is evident that these fasciculi do not conduct a centripetal current originating in either the lower extremities or the lower section of the trunk; perhaps they may serve for such currents from the upper extremities, or the superior portions of the trunk, but this is not probable. And it is yet undecided whether these tracks are used by centrifugal stimulation having its origin in special portions of the greater or lesser brain.

14th. The gray matter is not subject to the formation within it of these abnormal cells; from which, however, no conclusion can be absolutely drawn with regard to its powers of conduction. C. W.

ART. XXV.—*Elements of Chemistry; including the Applications of the Science in the Arts*.—By THOMAS GRAHAM, F. R. S., Professor of Chemistry in University College, London; Vice-President of the Chemical Society, &c. &c. Second American from an entirely revised and greatly enlarged English edition, with numerous wood engravings. Edited, with notes, by ROBERT BRIDGES, M. D., Professor of Chemistry in the Philadelphia College of Pharmacy, &c. Philadelphia, Blanchard & Lea, 1852: 8vo.

THE sciences are now engaging the attention of mankind to such an extent as to draw to their investigation the ablest minds, and from this has resulted their rapid advancement, the discovery of new facts, the correction of old views, and the formation of more just conceptions of their phenomena. In the science of chemistry this is particularly the case, and this involves the necessity, in every successive edition of any work on this subject, of a strict revision and adaptation to the advances made, and the incorporation of recent discoveries, when in conformity with the objects of the publication. The present edition of Graham's Chemistry evinces that the author has been fully impressed with the above views, as will be evident to any who will compare it with the first. Although only comprising one-half of the work, the matter added has enlarged its extent about sixty pages, including numerous additional illustrations by cuts. The alterations in the original text consist of occasional corrections, numerical and others, interpolation of additional observations, varying in extent from short sentences to whole pages, and

in re-writing parts or the whole of some subjects, so as to convey an accurate knowledge of the present information on these points. In some instances the arrangement has undergone alteration, and with advantage in approximating kindred subjects which were before too distant. These differences from the first edition are too numerous for any detail, very frequently being apparent in each of several successive pages, and very seldom exhibiting any long interval. The merits of this work are so well known that comment is unnecessary, and the present edition is calculated to sustain, and indeed elevate, the reputation the author has already acquired.

In the typographical execution there is an evident improvement over the first American edition, and there will also be noticed a modification in the arrangement, in the almost total absence of foot notes, the additions of the editor being inclosed in brackets, and with the bibliographical references incorporated in the original text of the work. In regard to these latter, it will be noticed that their number, which in the first edition was very great, has been still further increased, not in the newly-added matter only, but also in the older parts—a very valuable aid for those who desire to investigate any subject in all its details.

ART. XXVI.—*Review of Materia Medica, for the Use of Students.* By JOHN B. BIDDLE, M. D. etc. etc. With illustrations. Philadelphia, Lindsay & Blakiston, 1852: 12mo. pp. 322.

THIS work belongs to a class of productions which, when kept within their proper sphere, are unquestionably calculated to facilitate the labours of the student in the particular branches of knowledge of which they treat, but which, when adopted as substitutes for more extended and elaborate treatises, are productive of no little mischief. As condensed reviews of the elements of the science to which they refer—embracing a brief summary of its leading facts and principles—they may serve as useful guides to a course of lectures, while at the same time they will aid the student in his mental review of the knowledge to the acquisition of which his time and attention have been devoted; correcting misapprehensions, indicating to him what may have escaped his notice, and recalling such points as had been but slightly impressed upon his mind, and, in consequence, liable to be quickly forgotten. When, however, as is too often the case, they are made the sole guides to science—when the student believes that, by committing the brief summary they present of leading facts and principles to memory, he has acquired an adequate acquaintance with any given branch of science—their tendency is then in the highest degree mischievous. They discourage close and prolonged application—that full and thorough acquisition of knowledge which can alone render it permanent and profitable; and, by substituting in the student a mere act of memory for the exercise of the reasoning, the judging, and the comparing faculties of the mind, works of the character referred to are liable to impede even the subsequent progress of those who have been so unfortunate as to make them their sole guides, rendering to such the most favourable opportunities subsequently presented for improvement in any department of science, barren and profitless.

Keeping in mind then that the work before us is to be viewed as a mere elementary treatise on the *Materia Medica*, as an outline only of the leading facts and principles usually comprised in this branch of medicine, as set forth by the standard authorities: as a review of, rather than as an exposition of the science of which it treats, we can freely recommend it to the attention of the American student.

It is, in fact, a judiciously executed manual of *materia medica*, indicating a perfect familiarity with the subject on the part of its author, and an admirable facility in condensation: all that is actually important in relation to the several received pharmacological remedies being concisely indicated, but at the same time with the utmost clearness and precision.

D. F. C.

QUARTERLY SUMMARY
OF THE
IMPROVEMENTS AND DISCOVERIES
IN THE
MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Molecular Origin of the Tissues.* By Dr. BENNETT.—The great generalization of Schwann was that all tissues are derived from cells. Subsequently, it was ascertained that the nucleus, or cell-germ, exercised an influence on the tissues, independent of its cell-wall; and it was endeavoured to be shown, that some tissues might be derived directly from nuclei. The object of this communication was to point out that the nuclei themselves originated from smaller bodies, viz., molecules; that these were the origin of every texture, and to indicate some of the laws which governed their formation, arrangement, and subsequent development. From a review of the observations of Schleiden, Schwann, and Martin Barry, the author pointed out how the first appearance, observable in all developing organisms, was a mass of molecules and granules, which, by aggregating or melting together, constituted the cell-germ. Around the cell-germ other molecules were formed, which again, by melting together, constituted the cell-wall. Further development, in like manner, proceeded by the apposition of molecules. At any period in the process of evolution, the onward progress might be checked when the structure became disintegrated in the inverse manner to its formation: First, the cell-wall became dissolved, then the nucleus, both of which were reduced, first to molecules, then to a fluid. Hence there were molecules of evolution and molecules of disintegration. Occasionally, between the cell-wall and nucleus, secondary molecules were formed, which constituted peculiar secretions, as they have been termed: these might be called molecules of transformation. The author described the origin and mode of formation of these three kinds of molecules, their physiological and pathological importance, and pointed out the advance which had been made in our knowledge of molecular formation by the observations of Ascherson Harting, and Melsen. In complex organisms, the higher tissues were formed by an elaboration of blastema, mainly due to the successive evolution, transformation, and disintegration of matter, by means of the three different kinds of molecules, of which the author gave numerous examples, derived from the elaboration of the ovum, of the blood, the transformation of insects, the process of fissiparous division in the lower animal forms, &c. He pointed out that molecules had independent movements, sometimes physical, as in the case of Brown's molecular movements, at other times vital, as seen in many organisms. That occasionally we had molecular fibres, from the aggregation end to end of molecules, in the same way as we have nuclear cell-fibres. Moreover, each kind of fibre could assume inherent contractility, as in the case of vibriones, which might be called contractile molecular fibres, as spermatozoa might be denominated contractile nuclear, and cilia contractile cell-fibres. The author concluded a lengthy communication by remarking, that not only did a study of the molecular element indicate the origin and development of healthy and morbid product, but it pointed out the basis on which a rational treatment was

to be founded, as far as diseases of nutrition were concerned. Thus in tubercular diseases, where molecules of evolution were deficient from absence of the fatty element in the chyle, animal oils were indicated to favour the production of such molecules. When the blood was diseased, in cases of gout, rheumatism, rachitis, scurvy, &c., such morbid conditions could only be removed by the introduction of substances which either directly or indirectly, physically or chemically, favoured the production of certain molecules of transformation, as those in the blood; and when any of the tissues seem redundant and hypertrophied, tumours constituted the morbid condition; thus the cure would depend on the discovery of those means, whereby granules of disintegration might be induced and subsequently eliminated.—*Proceedings of Edinburgh Physiological Society, in Monthly Journal of Medical Science.*

2. *Pathological Cell-Development.*—Dr. GAIRDNER made a verbal communication of considerable length, on certain peculiarities of pathological and other structures, as bearing on the different theories of cell-development. He considered the cell-theory of Schleiden and Schwann, although it led to the discovery of many interesting facts, and really important morphological generalizations, to have been utterly overthrown, as a general theory of development, by the progress of scientific inquiry. The "cell" of these physiologists, so far from having the fixed and uniform character of a basic type of form, was the most fluctuating and uncertain of all morphological creations. Its form, size, law of development, were either confessedly uncertain, or had to be stated in terms so vague as to lead to the conclusion that form and substance, and, perhaps, microscopic size, were the only attributes essential to the idea of a cell. No one could tell, in practice, what was a cell-wall and what was a nucleus, and no one could give a satisfactory theoretical definition of either, or resolve, for all cases, which of the two preceded the other in the course of development. The theory of "germinal centres," held by Mr. Goodsir, in so far as it ascribed to certain "nucleated particles" the function of the cell, was, in Dr. Gairdner's opinion, subject, in like manner, to the imputation either of vagueness or of want of comprehensiveness. If these nucleated particles came under any more precise definition than was applicable to every kind of organic or inorganic structural atom, it would be very difficult to show that they monopolized and centralized the whole functional activity of the organism, or were more necessary than other parts to its growth and preservation. He (Dr. Gairdner) believed that there was no distinction in the organism of passive and active atoms, and considered every point and every molecule as endowed with its own life, and placed, in its own peculiar sphere of activity, in harmony with the rest. He agreed with Dr. Bennett in thinking, that many tissues arose from elements far more minute than any to which the term cell or nucleus had been applied; indeed, he was far from thinking that our microscopes had conducted us back to the real germs of the tissues, and considered that the structural, like the chemical atom, still lay in the remote region of hypothesis. He firmly believed, however, in these hypothetical germs, and could not conceive of the tissues being formed by anything like what the Epicureans would have called a concourse of atoms, according to their physical and chemical properties. Hence he did not think, that by the mere introduction of peculiar molecular elements into the food, we could either create new tissues or destroy old ones, so directly and simply as had been hinted by Dr. Bennett. The positive part of Dr. Gairdner's communication consisted in the detail of observations on the structure and development of the pus-corpuscles and other pathological structures, intended to show that the so-called cell-walls were often generated in great numbers without nuclei; and that the whole of the facts of cell-development contradicted the idea of any part of a cell being, more than another, the source of its functional activity and development. In regard to the development of fibres, Dr. Gairdner thought there was no evidence that these were ever produced from cells, under any circumstances; and he had long been in the habit of regarding the so-called fibre-cells as merely transition types in morphology, and not parts of a physiological succession of stages of development. It was difficult to prove this view any more than its opposite, but he thought any one who would give it con-

sideration in original observations would find it in harmony with all the known facts, both physiological and pathological.

Dr. SANDERS remarked that Kölliker had demonstrated unstriated muscular texture to be composed of permanent fibre-cells, whose development by elongation of spherical nucleated cellules he had traced in the pregnant uterus. This texture, therefore, had been lately found a corroboration of Schwann's views, which it was previously thought to contradict. Doubtless some textures were formed without passing through the form of cells; thus, particularly, fibrous tissue, as observed in cartilage by Redfern and Donders; yet the constant presence of nuclei and cellules in skin, mucous membranes, glands, and bone; their transition forms; their extensive development in the fœtus; their occurrence in newly-forming textures in all organized beings, animal and vegetable, gave immense weight to Schleiden and Schwann's views, and justified our adherence to them in physiological anatomy. In pathology, their application appeared more limited, and less satisfactory. Dr. Gairdner's statements, and a gaining distrust among observers at home and abroad, proved the necessity of submitting the "cell theory" to the criticism of new and extended observations; it ought not, however, to be rejected, but only thoroughly reinvestigated.—*Ibid.*

3. *Structure of Arteries.*—Mr. DRUMMOND exhibited several preparations of the middle coat of the aorta in the ox, for the purpose of showing, first, that many of the fibres present a distinctly transverse striated appearance. They are branched generally, and anastomose with neighbouring fibres, presenting an appearance very similar to the branching striated muscular fibre, seen in some of the insecta. From muscular fibre, however, they differ in their chemical constitution, agreeing in this respect with yellow elastic tissue. They are in all probability analogous to the striated fibres occurring in the ligamentum nuchæ of some animals. When viewed with a high power, many of them seem to present a series of cup-shaped depressions, arranged in linear series in the longitudinal axis of the fibre, with intervening ridges or partitions, to which the striated appearance is owing. Second, that the structure described under the name of the fenestrated coat of Henlé, as it occurs in the middle coat of the aorta in the ox, is formed by the amalgamation of the network of the yellow elastic fibres, the fenestræ or perforations being merely the remains of the areolæ between the fibres. The fibres which go to the formation of this coat often present traces of the transverse striated appearance above described. Preparations were also shown illustrating the development of the yellow elastic tissues as it takes place in the ligamentum nuchæ of the calf. A description of the development of this tissue will be given in a future report.—*Ibid.*

4. *Development of Pus-Corpuscles.*—Dr. SANDERS reported to the Physiological Society of Edinburgh some observations on the corpuscular contents of the vesicles of smallpox. On the fourth day of the eruption, the fluid of the vesicle presented some clear, gray nuclei, about the size of blood-corpuscles, and showing only one or two granules in their interior when acted on by acetic acid. On the fifth and sixth days, these corpuscles had increased in size and numbers, and become more granular; the amount of free molecules and granules, at first very scanty, was now greater. On the sixth and seventh days, nucleated cells, spherical, and more or less granular, occurred along with the corpuscles before described; and a few large cells, of the diameter of four to five blood-disks, and containing several nuclei imbedded in granular matter, were also observed. The corpuscles, however, were the chief elements; they were granular, like the usual pus-corpuscles, and presented under the action of acetic acid, some a triple nucleus, others several granules. From this stage, when the fluid was distinctly purulent in its characters, even to the naked eye, up to the time of scabbing, or twelfth day of the eruption, the changes were a gradual increase in the free granular matter, and a diminution in the amount of corpuscles, which at last gave place to the granular matter; which last, along with epithelium-cells, dried up to form the scab. The fluid of the vesicles, therefore, exhibits a process of

cell-growth from nuclei to pus-corpuscles, and nucleated cells, which become more and more granular, and break up at last into free granular matter. The so-called pus-corpuscles are a stage in cell-formation. Considering the small amount of granular matter, both free and within the corpuscles at the beginning, and its great abundance subsequently, the author was disposed to doubt the formation of these corpuscles and cells by the aggregation of granules subsequently surrounded by a cell-wall, but regarded the granular matter rather as a production of cell-growth.—*Ibid.*

5. *Fibrin in the Blood of the Fetus.*—Dr. DRUMMOND mentioned to the Physiological Society of Edinburgh that he had recently found the blood of the fetus to contain a considerable quantity of fibrin. Zimmerman asserts it contains none.

6. *Influence of Muscular Paralysis on the Modification of the Blood, and on the Duration of Irritability.*—M. BROWN-SEQUARD, a distinguished Parisian experimental physiologist, at present in this country, states that after the section of the nerves of a limb, the transformation of arterial blood into venous is imperfectly effected; but that the change is perfect if the paralyzed limb be galvanized.

The same experimenter has shown that, when the muscles of one limb have been paralyzed by section of their nerves a few days previously, their irritability lasts much longer after death than that of the muscles of the other limb; and their cadaveric rigidity is much later in coming on.—*Gazette Méd. de Paris*, Feb. 1, March 6.

7. *Mode of Termination of the Nerves in the Skin of the Fingers.*—Dr. RUDOLPH WAGNER has communicated to the Royal Society of Göttingen the following results of his investigations relative to the distribution of the nerves in the skin of the tactile extremities of the fingers:—

What are usually called the tactile papillæ are of two kinds, namely, *vascular* papillæ, which only contain capillary loops; and *nervous* papillæ, which are placed between them. These last have a conical form; and each of them contains in its interior a peculiar corpuscle, also of conical form, which receives the finest of the nervous fibrils that enter the papilla. Each primitive nerve-fibre divides into a great number of smaller branches, to which these tactile corpuscles are attached; and thus each is connected with several corpuscles. It is further considered by Wagner that each single fibre conducts the impressions made upon any of these branches to a certain spot in the nervous centres; and that thus but a single sensory impression is produced, whether the corpuscles supplied by any one fibre are touched separately, or all together.—*Gaz. Médicale*, March 6, 1852.

8. *On the Function of the Spleen and other Lymphatic Glands as Secretors of Blood.*—The *Monthly Journal of Medical Science*, for March, 1852, contains a very interesting paper on this subject, by Prof. J. H. BENNETT, M. D. From the various facts therein stated he considers himself justified in drawing the following conclusions:—

1. That the blood-corpuscles of vertebrate animals are originally formed in the lymphatic glandular system, and that the great majority of them, on joining the circulation, become coloured in a manner that is as yet unexplained. Hence the blood may be considered as a secretion from the lymphatic glands, although in the higher animals that secretion only becomes fully formed after it has received colour by exposure to oxygen in the lungs.

2. That, in mammalia, the lymphatic glandular system is composed of the spleen, thymus, thyroid, supra-renal, pituitary, pineal, and lymphatic glands.

3. That, in fishes, reptiles, and birds, the coloured blood-corpuscles are nucleated cells, originating in these glands; but that, in mammals, they are free nuclei, sometimes derived as such from the glands; at others, developed within colourless cells.

4. That, in certain hypertrophies of the lymphatic glands, their cell elements are multiplied to an unusual extent, and under such circumstances find their way into the blood, and constitute an increase in the number of its colourless cells. This is leucocythæmia.

5. That the solution of the blood-corpuscles, conjoined with the effete matter derived from the secondary digestion of the tissues, which is not converted into albumen, constitutes blood-fibrin.

9. *Influence of Medicines on the Temperature of the Body.*—MM. DUMARIL, DEMARQUAY, and LECOMTE have associated themselves together for the purpose of inquiring into the effect of medicines on temperature. Their experiments were made on dogs. To state the results briefly, they found that cantharides, in doses of from one to six grains, raised the temperature in six hours nearly 4° Fahr.; canella, in a dose of from eight to ten drachms, elevated the temperature 3° Fahr.; and a second dose raised 2° more. One drachm of secale cornutum in five hours increased the temperature about $1\frac{1}{2}^{\circ}$ Fahr. in five hours. Acetate of ammonia injected into the veins augmented also the temperature; put into the stomach, it produced the same effect in a less degree. Phosphorus, in doses of a grain and a-half to three grains, lowered the temperature. Strychnine produced no effect.

Certain purgatives were tried, such as colocynth, castor oil, etc., the effects varied according to the dose; usually it was lowered, and then elevated to about $1\frac{1}{2}^{\circ}$ Fahr. above the standard.

Emetics—as ipecacuanha, sulphate of copper—produced in small doses a little elevation; but, in large doses, lowering of temperature to the extent of 2° or 3° Fahr.—*Med. Times and Gazette*, May 22, 1852, from *L'Union Médicale*.

ORGANIC CHEMISTRY.

10. *Constituents of the Splenic Fluid.*—In the fluid obtained by boiling a spleen in water, SCHERER has discovered that, besides some of the constituents of the juice of flesh, some nitrogenous principles are present, viz., uric acid and a body hitherto unknown, for which he proposes the name hypoxanthin. The formula for the latter is $C^5H^2N^2O$. Hypoxanthin is a powdery crystalline mass, soluble in 1090 parts of cold, and in 180 parts of warm, water; heated with nitric acid, it forms a yellow stain, which liquor potassa, in the cold, turns red, and, with heat, changes to a lively purple, like murexid. The composition of hypoxanthin is of great interest, as may be seen by placing together its formula, and the formula of zanthin, as determined by Liebig and Wohler, and of uric acid:—

Hypoxanthin	.	.	.	.	.	$C^5H^2N^2O$
Zanthin	.	.	.	.	.	$C^5H^2N^2O^2$
Uric acid	.	.	.	.	.	$C^5H^2N^2O^3$

Hypoxanthin has been found, not only in the spleen of men and oxen, but in the fluid pressed from the muscular substance of the heart. Also, very lately, Gerhard, a pupil of Scherer's, has detected it in small quantities in the blood of oxen.

In addition to uric acid and hypoxanthin, Scherer has found in this splenic fluid other bodies, viz.:—

1. A new nitrogenous crystallizable body, which resembles, excepting in containing no sulphur, the bile principle, he terms it lienen.
2. An albuminous substance, in combination with much iron.
3. Iron in combination with acetic and lactic acids.
4. A carbonaceous pigment, analogous to the colouring matters of urine and muscle.—*Med. Times and Gazette*, May 22, 1852, from *Cunstatt's Jahresbericht*.

11. *Composition of the Succus Entericus.*—The composition of the intestinal fluid has lately been made the subject of an inaugural dissertation by ZANDER, a pupil of Bidder and Schmidt. An abstract of it is given by Scherer. The fluid was obtained by tying the ductus communis choledochus and the pancreatic duct, and then making an intestinal fistula: it was semi-fluid, stringy, colourless, always alkaline, though not always equally so. It contained, in 1000 parts, from 30 to 38 parts of solids, of which from 15 to 25 were soluble in alcohol, and from 5 to 13 were insoluble. It contained no albumen. It was found to possess the properties of dissolving flesh and coagulated albumen, and of changing starch into sugar. The pancreatic fluid and the bile did not appear to heighten the power it possessed of dissolving albumen.—*Ibid.*, from *Canstatt's Jahresbericht*, 1852, *Erster Band*, p. 100.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Treatment of Albuminuria.*—Dr. C. HANDFIELD JONES, in an interesting paper, read before the Medical Society of London, on the morbid conditions of the kidney giving rise to albuminous urine, presents the following interesting remarks relative to the treatment of those conditions:—

The treatment of acute anasarca, whether occurring after exposure to cold and wet, after measles, or any other exciting cause, is sufficiently clear. The engorgement of the kidneys must be relieved: 1, by general blood-letting, if the patient's strength allow of it; 2, by cupping on the loins, which should never be omitted in any case, as it powerfully counteracts the local determination to the kidneys; 3, by tartar emetic, which, acting very much, as it does, in pneumonia, depresses the action of the heart, unloads the congested renal capillaries, promotes the action of the skin, and acts beneficially in diminishing the tendency to secondary inflammations. The employment of tartar emetic should be continued some time, the patient being of course kept in bed: warm or hot air-baths should be occasionally employed, and this system persevered in until the urine is perfectly free from its dark sediment, gives no trace of albumen, and is passed in proper quantity. Many warnings have been given against the employment of saline diuretics in this complaint: I believe them to be as prejudicial while engorgement exists, as squills or the turpentine would be during the acute stage of a bronchitis or pneumonia: but in the later stages of the complaint, I am inclined to think in moderate doses they are beneficial. I have recently had a case under my care, in which, after the acute symptoms had been subdued by the treatment above mentioned, I gave several doses of nitre with a little nitric acid and a bitter. The urine became quite free from deposit, and almost so from albumen. I afterwards changed this plan for a chalybeate, giving the man small doses of the carbonate of iron, on account of his anæmic aspect; but I had soon to give this up, as it brought back again the turbid state of the urine, and had evidently induced fresh renal congestion. Again I returned to the nitre and acid, and the urine recovered its healthy condition, and continued so. The bowels should be kept open, but I should not recommend active purgation in this form of dropsical disease.

"In the true Bright's disease, it is of much importance to entertain correct ideas of the pathology; and I do not indeed think it altogether indifferent whether we call the disease a subacute inflammation or a degeneration. For if it be an inflammation at all, bloodletting naturally suggests itself as one of the primary remedies, and the inexperienced might readily commit the error of employing it when useless and injurious. But if we name the disease a degeneration, the mind at once turns to a more appropriate class of remedies. With respect to the secondary affections which renal degeneration induces, I can offer no new recommendations to the experienced Fellows of this Society, and these matters have been amply treated of by others. But whether anything may be

done towards restoring the degenerated organ, and improving the quality of the deteriorated blood, is a subject scarce touched upon by any one, and yet of the highest interest. I can but offer a few suggestions. Of course when a kidney has utterly lost the greatest part of its cortical secreting structure, the lost tissue cannot be restored; we cannot create the organ anew. But we can never during life know for certain whether an organ is so wasted, or whether it is only in process of being so; we cannot tell whether it be not still possible to revive the decaying power, and to repair the injured mechanism. Our guiding ideas are, I think, two; one recognizing the degenerative nature of the disease, its essentially low character, and therefore seeking to oppose it by all possible corroborative means, and such as increase the general vigour of the system. Cod-liver oil, iron, quinine, regulated and active exercise, a system of training, such as an athletic employs, mental occupation; these, judiciously employed in the earliest stages, would, I believe, have much efficacy in counteracting the degenerative tendency. There is no doubt that the phthisical tendency, nay, the deposition of tubercle, in the lungs, may be checked, and life greatly prolonged, by such measures; why should we not employ them, also, with effect in this kindred degeneration? One can hardly help feeling that our duty, as practitioners, is not confined to the treatment of disease as it arises and excites alarm, but where the known diathesis, the exterior tokens of the inward infirmity, inspire us with too good ground for future apprehensions, we should give timely warning, and show how far easier it may be to avert the coming of the evil while yet distant, than to arrest it when its course has once begun. The second idea which would guide my treatment is the following, and is founded very much on the peculiar condition of the epithelium of the renal tubule in the earlier stages of degeneration. We know that the alkalies and several of their salts exert a remarkable influence upon albumen and allied matters, dissolving them or tending to render them more fluid. Now it seems to me quite conceivable that alkalies, either pure, or preferably, perhaps, as vegetable salts, which become decomposed ere arriving at the kidneys, may so act on the bulky, coarse, heaped-up epithelium, as to cause it to assume a more fluid state, creating less obstruction, and more ready to undergo its appropriate changes. Such an effect, or at least a similar one, was certainly produced by Mr. Brandish in his treatment of serofulous glands by liquor potassæ: and I cannot but think we may derive a useful hint from the practice he so successfully pursued. Of course, during the trial of such a plan, care must be taken to uphold the strength adequately, and not to push the remedy too fast. If this be not carefully observed, if the action of the remedy be not most carefully proportioned to the morbid process and to the general strength, it will cease to be a remedy; it will only act injuriously. I regret that I have not experience, to lay before the Society, of the result of such a plan of proceeding as I have traced. I have only employed it partially in one case; in this, indeed, all seemed to go on well for some time; the man, a gardener, who had Bright's disease in a marked form, kept to his employment, lost his dropsy, and seemed on the whole decidedly improved; but after some weeks the lungs became gorged and vomiting set in, which I was unable to restrain. Probably the renal degeneration was too far advanced, and the attendant circumstances were unfavourable; but still the results were sufficiently encouraging to induce me certainly to try the plan again when a suitable opportunity may occur. Cupping on the loins even Frerichs does not counsel in Bright's disease, a measure which, if the disease depended essentially upon exudation into the kidney, would seem certainly advisable, at least in small quantities, or frequently repeated dry cupping. It should only be employed when there appears to be an attack of engorgement supervening on the degeneration, and then as sparingly as possible."—*Lond. Journ. of Med.*, May, 1852.

13. *Treatment of Intermittent Fever by Quinine in large doses.* By Dr. MEYER, of Berlin.—Dr. Pfeuffer, in *Heute and Pfeuffer's Zeitschrift*, has contributed a paper having for its object to show that simple intermittent fever may be cured by a single large dose (ten grains) of quinine, administered on the day that the paroxysm is absent; and that this dose is not followed by any evil effects. With this view, Dr. Pfeuffer adduces thirty-four cases of quotidian and tertian inter-

mittent, treated between the 4th of May and 7th of August, which cases varied in their duration from four days to three months. In these, no return of the fever had been observed after the administration of the ten-grain doses of quinine; whereas, although ague is not endemic or peculiarly obstinate in Heidelberg, from forty to a hundred and twenty grains have usually been required in the ordinary treatment of cases of intermittent fever. Dr. Pfeuffer at the same time gives his patients a diet of soup, fish, flesh, vegetables, and wine.

These observations, Dr. Meyer remarks, correspond with the statements of Torti, in 1709; and of Piorry and Bretonneau, in 1845; and Bittner, in 1850; also with the results of his own experience in six cases in which he had adopted the same treatment. Furthermore, from the end of November 1850, to the 1st of January 1851, twenty-eight soldiers suffering from intermittent fever were treated with quinine in ten-grain doses, given from five to ten hours before the paroxysm; in these cases the fit was arrested: a nutritious diet of meat and beer was supplied. Of these twenty-eight cases, none were quotidian, three were tertian, and twenty-five were quartan agues. The duration of the disease had varied from a fortnight to eighteen months. The patients had most of them previously taken quinine or arsenic without benefit. Eight of these patients had resided in the fortifications at Posen, which are situated at a high elevation, but deficient in light and air; they had the quartan form of the disease, and had received no benefit in the military hospital; in all, without exception, the spleen and liver were enlarged; these individuals exhibiting an anæmic cachectic aspect, with sallow complexion, and œdema of the face and ankles. The prognosis in these cases was most unfavourable; but the attack was suppressed by the ten-grain doses of quinine for eight, fourteen, twenty-one, and twenty-eight days, until at last the health was perfectly restored by the subsequent employment of ammoniated tincture of iron, a liberal diet, and fresh air.

Of the remaining twenty cases, three were tertians, which severally had existed fourteen days, three weeks, and three months; thirteen were quartans, of which two had lasted two months; four, three months; one, twelve months; one eighteen months; these were cured by a single dose of ten grains of quinine: one quartan of three weeks' duration, and one of four months' standing, were cured by a second dose. Two cases remained rebellious: one, that of a pale feeble individual, with splenic disease; the other, a robust man, with only moderate enlargement of the spleen. Among the sixteen who were cured by the first dose of ten grains, two were remarkable; one was a strong, healthy-looking man, who had had the disease eighteen months, with slight enlargement of the spleen; the usual effects followed the administration of the large dose of quinine, and so far were evidence of perfect cure; at the same time that painful dragging of the limbs, from which he had suffered during the entire progress of the disease, suddenly disappeared; and the other, a patient in a lax anæmic condition, which had existed for twelve months, with an enlarged liver, and a spleen more than seven inches broad. It was for the treatment of the latter disease that the patient had been consigned to the hospital. A full dose of quinine, with liberal diet, had suppressed the fever during the time that he remained in hospital, and had effected a diminution of the spleen. The cure was permanently effected by a full diet and the internal use of iron.

Dr. Meyer concludes, as the result of his observations, that Dr. Pfeuffer's plan of giving a single large dose of quinine, although not uniformly successful, is successful in the majority of cases of uncomplicated quartan ague where no special endemic influence or altered condition of the blood interferes. The subsequent employment of iron as a medicine, and a nutritious full diet, secure the continuance of the benefit. The statement of Dr. Pfeuffer, that no ill effects follow the use of a large dose of quinine, is also confirmed by Dr. Meyer.—*Lond. Med. Gaz.*, Dec. 1851, from *Casper's Wöchenschrift*.

14. *Iodine Clysters in the Treatment of Dysentery*.—Dr. EIMER believes that the great point to which practitioners have to direct their attention, is the enormous amount of organic losses consequent on the continuance of this affection; so that, according to Oesterlen,* within three weeks, more than the entire

* See British and Foreign Medico-Chirurgical Review, vol. v. p. 245.

blood-mass may pass away as albumen in the stools. As a means of cutting these discharges short, he strongly recommends iodine clysters; which, in recent cases, may at once arrest the progress of the disease, and in all diminish the number of stools, and normalize their condition, whatever the individual peculiarities of the case may be. From five to ten grains of iodine, and as much iod. pot., are administered in two or three ounces of water, from two to four times a-day—twice daily usually sufficing. If the rectum is too irritable to retain it, ten or fifteen drops of tr. opii are to be added, and a mucilaginous vehicle substituted for water. In spite of unfavourable conditions, so constantly successful did Dr. Eimer find this remedy during an epidemic, that he believes the disease will, as a general rule, be found curable by it, if it be resorted to before the organic changes in the intestine have advanced too far, exhaustion become too considerable, or important complications set up. In some slight cases it was employed alone. Generally, a simple oily emulsion was also administered, and sometimes acetate of lead and opium.—*B. and F. Med.-Chirurg. Rev.*, April, 1852, from *Henle's Zeitschrift*, Band x. p. 238.

15. *Starch in Cutaneous Diseases.*—M. CAZENAVE has lately employed, largely, powdered starch, pure or mixed with oxide of zinc or camphor, in various diseases of skin. In acute eczema, impetigo, herpes, acne rosacea, after washing the parts with a weak alkaline solution, and well drying them, some of the following powder is sprinkled, viz.: Oxide of zinc, one part; starch powder, fifteen parts. In prurigo of the axillæ, the anus, or the genitals, a quarter part of camphor is added.—*Med. Times and Gazette*, May 22, 1852, from *L'Union Médicale*.

16. *Solution of Nitrate of Silver in Pruritus of the Genital Organs.*—WINTERNITZ has lately recommended a solution of nitrate of silver (grs. iii ad \mathfrak{z} i aquæ) in pruritus of the vulva or scrotum. The solution is applied three times daily, and two cases are given in which it succeeded after a fortnight's trial, when all other means had failed.—*Ibid.*, from *Zeitschrift der Gesell. der Ärzte zu Wien*.

17. *Cauterization of the Glottis in Whooping-Cough.*—M. JOUBERT has published the results of his experience of this mode of treating whooping-cough. He has treated in all 98 cases in this manner, but he excludes 30 of these as not being worthy of reliance. The remaining 68 cases he divided into three series, according to the period at which the treatment was commenced. Of these, the general results were, that in 40 the cure was rapidly effected, in 21 a marked relief was experienced, and in 7 cases only the treatment failed altogether.—*Prov. Med. and Surg. Journ.*, May 26, 1852.

18. *On the Hemorrhagic Diathesis.*—Dr. LANGE has recently contributed an interesting paper on this affection, containing the tabulated results of an examination of the history of one hundred and forty examples. It has hitherto been only met with in the northern hemisphere, occurring in America between 30° and 45° north latitude, and in Europe between 45° and 60° north latitude. Germany is among the countries most liable to it, and especially so along the course of the middle Rhine and the Maine. The coasts are far less liable than are inland regions. The inhabitants of mountainous districts are less liable than those of plains traversed by rivers. Vine countries are very liable.

The subjects of the disease do not attain great age; for among one hundred and forty examples, only nine were aged more than fifty; the female sex seeming to possess less power of endurance than the male. The causes giving rise to the hemorrhage have usually been insignificant, as, e. g., scratches, cuts, leech-bites, extraction of teeth. When the bleeding is *spontaneous*, that from the nose is most frequent and oftenest fatal. *Vomiting of blood* is much more rare; and, it is remarkable, that only one of the fatal cases arose from *hæmoptysis*—the disease indeed seeming to have no affinity with tuberculosis. In one case vaccination gave rise to profuse bleeding, without, however, preventing the rising of the vesicle. The statement of Fordyce and others, that deep wounds

bleed less freely than superficial, is not confirmed: but the healing of all kinds of wounds is very tedious, although gangrene seldom occurs.

The disposition to hemorrhage sometimes first shows itself during the first weeks of life, but usually during the first or second year, the latest period in these tables being the eleventh year. The earlier the hemorrhage exhibits itself, the earlier, as a general rule, does death occur. At a later period the inclination to hemorrhage usually manifests itself as petechiæ and ecchymoses. Accessory diseases do not, as, *à priori*, it might have been expected they would, pursue a more dangerous course in these subjects, excepting when those of the respiratory organs excite epistaxis. The *duration of the attacks* is very different, this being, perhaps, on an average, ten or twelve days—spontaneous bleeding usually continuing longer, but being better tolerated than traumatic. The effect of *season* is not determined; but the bleeding seems to occur oftenest in spring and autumn. The blood is thin, and deficient in coagulability. In the majority of instances, the intellectual powers of these patients are of a high order: and in most of them the colour of the eyes is blue, the complexion fair and delicate, and the hair light. Usually the constitution is strong, and the muscular system is often powerful and developed. In certain cases, the radial artery has been observed to be transparent in some spots, owing to the deficiency of the fibrous coat—confirming Rokitsansky's view, that the disease consists in a remarkably delicate construction and vulnerability of the vessels, and a watery condition of the blood. The choleric-sanguineous temperament prevails, and so-called rheumatic pains are very constantly observed. Spots of *ecchymosis*, often absent, may, when present, be either spontaneous or traumatic, the latter being usually much larger than the former. They change in colour, as after an ordinary contusion. Sometimes the ecchymoses stand in a critical or antagonistic relation to other affections; thus, *e. g.*, they may disappear on the advent of a paroxysm of gout, and reappear at its termination. In some hemorrhagic families, they constitute a lower form of the disease in certain of the members. Traumatic ecchymosis may be produced by strong muscular exertion, by falls, or even pressure. It usually disappears unaided, though requiring a longer period than the spontaneous; and, if opened, it gives rise to dangerous hemorrhage.

According to the tables, no difference seems to exist as to condition of life, or residence in town or country. The influence of hereditariness is only imperfectly indicated. The *mortality* from the disease seems to be greatest between twenty and thirty, and then diminishes. The earliest age at which it has been known to cease spontaneously has been between twenty-five and twenty-eight. Commonly disease of the liver, hemorrhoids, gout, or rheumatism, supervenes, and the influence of art is of little use. In palliating the affection, a certain time must always be allowed for the blood to flow, or congestion of internal organs is produced; and, in such cases, where this precaution has been neglected, dry cupping of the extremities should be resorted to. Generally, the bleeding stops of itself; but only when exhaustion has occurred. Compression is of little use; and, among the styptics, sulphuric acid, muriated tincture of iron, and a spirituous solution of sal ammoniac, are the best. Caustics and caustics usually fail.—*B. and F. Med.-Chirurg. Rev.*, April, 1852, from *Schmidt's Jahrbuch*, vol. lxx. p. 35.

19. *Spontaneous Development of Gas in the Blood as a Cause of Sudden Death.*—In the *Presse Médicale de Bruxelles* is published a memoir on this subject, by M. DURAND FARDEL. The case which forms the basis of the memoir is that of a lady, aged 56, who, being at Vichy with her husband, proceeded, as is the fashion, to take the baths, though there was no necessity for them as regards her general state of health, which, on the contrary, was remarkably good. It appears that on July 20, 1850, she took her second bath at four A. M. She had been over night in her usual state of health. In walking to the baths she noticed that her breathing was shorter than usual, and the attendant observing her condition advised her not to bathe that day. She, however, did so, and remained in her bath half an hour. When she got out she felt uncomfortable,

and in a few minutes sank exhausted into a chair. Respiration now became very difficult, and in a few moments she was dead.

M. Durand Fardel, who was on the spot immediately, found her still covered with her bathing sheet. The face was pallid; lips violet; no froth on the lips; limbs flaccid; and heart's action completely ceased.

The autopsy was made twenty-two hours after death, the 31st of July, at three o'clock in the morning. The body presented no appearance of putrefaction, there being some lividity only on the depending portion of the trunk and members. The heart was very large; the right cavities distended with liquid blood, rather violet-coloured than black, syrupy, very frothy; the bubbles of gas inclosed were some (very numerous) as big as the head of a pin, others less common, as large as peas. When pressure was applied over the course of the two venæ cæve, the blood which flowed into the right auricle was frothy, like soap and water; the parietes of the right cavities of the heart presented a superficial violet colour; the left side was completely void of blood, and not coloured; the left ventricle was considerably hypertrophied; the orifices of the heart did not present any appreciable alteration, as also the aorta. All the abdominal venous system was distended with violet and frothy blood; numerous bubbles of gas were also found in the blood of the splenic and portal vein. The lungs filled the chest, presenting a few adhesions, and some appearances of emphysema; their colour was reddish outside, but of a deeper tint internally, where they presented traces of considerable sanguineous congestion, without infiltration of blood. There was considerable frothy congestion in the more depending parts. The bronchi contained some whitish frothy mucus. The abdominal organs presented nothing more worthy of notice than a considerable sanguineous congestion of the liver, spleen, kidneys, and a remarkable congestion of the veins of the epiploon and mesentery. The epiploon was loaded with fat; the stomach rather large, and containing about half a glass of clear colourless mucus. The intestines were not opened. The encephalon did not present the same degree of congestion as the other organs; the sinuses of the dura mater contained only a little liquid blood, not frothy. The brain and origin of the spinal marrow, examined as soon as possible, appeared completely natural, a little injected with blood; no bubbles of gas appeared in its vessels.

The author publishes this case in all its details, as science possesses as yet very few cases of this kind. The observations of Morgagni, wanting in details, do not allow of a positive judgment. M. Reyrolles, in two cases of death by hemorrhage, found the blood frothy in the heart and veins.

Finally, M. Ollivier, of Angers, published a case (*Ann. Gén. de Méd.*, 1838) which leaves no doubt as to the existence of the disease which M. Durand Fardel observed in this case. A curious circumstance, doubtless observed before, enabled M. Durand Fardel to state the existence of gas at the moment even of death. The bleeding performed at the arm gave issue for more than a quarter of an hour to blood, which, trickling from the vein of a body deprived of life, carried with it numerous bubbles of gas.

To what cause can the origin of this gas be attributed? This is a question still undetermined, and which may be perhaps solved at some future time by the chemical analysis of the gas found in the blood. Whatever it may be, the observations of M. Durand Fardel tend to prove that it is owing to a spontaneous exhalation from the veins, caused by spontaneous alteration in the crasis of the blood, of which we are ignorant.

[This case is still further important in its connection with those cases of sudden death after delivery in which air has been found in the blood, and is supposed to have entered by the uterine sinuses. May it not in these cases depend, as in M. Fardel's, on a spontaneous generation of gas?—Ed. P. J.]—*Proc. Med. and Surg. Journ.*, April 14, 1852.

20. *Infantile Phlebitis, with Purulent Deposits, Erysipelas, and Jaundice, arising from Inflammation of the Umbilical Vein.*—Dr. W. B. HERAPATH records (*Lond. Journ. Med.*, May, 1852) the following interesting case:—

Mrs. J. was delivered, Feb. 24, 1852, of her first child, a healthy male. The labour was comparatively an easy one; everything proceeded perfectly satisfac-

torily until the sixth day after delivery. A slight hemorrhage took place from the umbilicus at the period of the separation of the shrivelled remains of the funis, but this would not have been considered worthy of remark, had not other important symptoms subsequently developed themselves.

March 5d. Some signs of uneasiness; griping and gastric disturbance appeared; the evacuations were scanty and unnatural, consisting chiefly of curdled milk. Vomiting was also present. Castor oil was ordered.

4th. The child improved under the treatment.

6th. As the above-named symptoms reappeared, the oil was again ordered; and as constipation existed, a larger dose was used and again repeated. A carminative was also prescribed, to expel flatulence from the stomach.

7th. The evacuations very scanty, deficient in bile, and chiefly consisted of curdled milk. The two doses of oil had only produced one movement. I ordered one grain of calomel and four of rhubarb; and directed them to be repeated in the morning, if necessary.

8th. Both powders were given, and some evacuations, having a more healthy appearance, resulted. The infant was considerably better. There were occasional spasmodic pains, accompanied by retraction of the limbs: slight shivering and moaning also occurred occasionally. The child was far from easy, but I did not see much to excite alarm.

10th. The nurse called on me to say that the child had become much worse, and "that it appeared swollen all over." Upon visiting it, I found that erysipelas had developed itself upon the index finger of the right hand, and also in the corresponding finger on the opposite side. A slight blush of erysipelas also appeared upon the second toe of the right foot: the knee was tumid, tender, and hot, but not erysipelatic. The little infant appeared to be in considerable pain; was almost constantly crying or moaning; vomiting often, with frequent hicough; it was feverish, refused the breast, and scarcely slept at all. The bowels were somewhat tumid, and presented a general tympanitic appearance. The umbilicus was perfectly sound and healthy; there was no hernia. I ordered an evaporating spirit lotion to be constantly applied to the inflamed and erysipelatous spots, and another dose of castor oil to be administered.

The occurrence of erysipelas in this case was entirely without any apparent exciting cause, and at first was inexplicable. The mother was in good health; the apartment was free from currents of air, in fact, warm, without being destitute of ventilation; the child had never been removed from it, and it had been carefully and attentively nursed. The appearance, however, of erysipelas in some measure accounted for the other anomalous symptoms.

11th. The child was decidedly worse. The erysipelas extended upwards to the elbow on the left side; the fingers were considerably enlarged, and very red; there was a puffy swelling just about the right sterno-cleido-mastoid, very tender to the touch; icterus plainly exhibited itself, the conjunctivæ were orange yellow, and the skin, where free from the erysipelatic blush, was generally yellow. This was not the case yesterday, but it came on during the night: the respiration was peculiarly hurried, short, and sometimes irregular, and sighing, but there was no cough or bronchitic rale; the pulse was rapid, fluttering, and weak; slight evidence of fluctuation was observed on the right finger.

In pondering over this strange combination of symptoms, the peculiar character of the erysipelas struck me; the rapid scattering of the disease, in fact, the co-existence of the erysipelas at various points of the system, appeared very marked; it had not that erratic disposition which that disease usually assumes. These, together with the manifest existence of pus about the finger joints, led me to imagine the entrance of pus into the system, whilst the presence of jaundice appeared to point to the liver as the chief part implicated; and it occurred to me that there was a general cause acting on the whole system, and I gradually came to the conclusion that phlebitis of the umbilical vein had produced a purulent fluid, which, entering the circulation, caused the peculiar combination of symptoms which rendered the case so interesting. I at once expressed my opinion to the parents and nurse, as to the nature of the case, as well as my conviction that the little patient would not survive; but in order to make an attempt to save it, iodine was applied freely over all the erysipelatous points.

The lotion was ordered to be continued constantly; and a few grains of gray powder were prescribed, together with an anodyne carminative mixture, to be frequently administered in small doses.

12th. At two P. M., the patient was evidently much worse, and was sinking rapidly. The erysipelatous redness had disappeared, giving place to a dingy purple, or livid colour. The icterus had increased in intensity; the temperature of the surface had much decreased, and the extremities were cold; respiration was becoming embarrassed, very irregular, gasping, and accompanied by a mucons rattle, whilst the mental faculties were wrapped up in a decided coma, and the eyes were glazed and open. Occasionally the child would partially arouse itself and moan piteously, but it was not sensible to external impressions of light or sound. The hiccough had become very frequent; and the pulse scarcely perceptible from its debility, and also very rapid. Occasionally the colour of the infant would undergo a considerable change, the countenance becoming suffused with a livid purple, around the eyes and mouth being of a deeper tint. These symptoms gradually increased in severity, the respiration becoming still more embarrassed, and at length about eight P. M. it expired, in slight convulsions. Having represented the extraordinary nature of the case to the parents, they kindly consented to a *post-mortem* examination, at which my friend Mr. Parsons (to whom I had stated the nature of the diagnosis formed) was present.

13th. *Post-mortem Examination.*—The whole surface of the body was of a deep orange-yellow colour: also the conjunctivæ. Collections of pus existed at all the erysipelatous points; about three drachms escaped upon making a puncture with a scalpel upon the inside of the right knee. At the second joint of the left index finger a similar puncture was also made, and a teaspoonful of thick yellow pus escaped. It was beneath the integuments only, and not in the joints, in either case. About two or three drops issued upon incising the toes, in the same way. Upon cutting through the integuments at the usual position for examination, a purulent deposit was opened at the clavicular articulation on the right side. This was superficial, being situated beneath the layers of fascia underneath the platysma myoides, and between the sternal and clavicular attachments of the sterno-cleido-mastoid. It did not appear to be in any distinct sac, but below it was bounded by the junction of the fascia to the clavicle; above, the probe would pass easily in the direction of the muscle, and pus had evidently taken the same course. About two drachms of pus were found in this situation. The umbilicus was perfect, and the cicatrix sound; the umbilical vein was large, and rounded. Upon cutting it across, within the integuments, it was found to be pervious through its whole length, and filled with a curdy purulent fluid, which became more purulent as the vein was traced backwards to the liver. There were not any purulent deposits in this viscus, but it was everywhere congested and of a uniform colour. The gall-bladder contained merely a few drachms of transparent, colourless, viscid mucus; its duct appeared impervious from some cause. Upon tracing the hepatic branches of the vena porta, they were found to contain pus, even to some of their smaller subdivisions, both in the right and left lobes. These appearances, however, were not general. Two main branches and their ramusculi were principally thus diseased; one on the right, and the other on the left. The greatest portion of the pus had found its way to the right auricle through the vena cava ascendens, which of course is but a continuation of the trunk of the umbilical vein. Some slight coagula were found in the auricle and ventricle. The pulmonary artery was obstructed by tolerably firm coagula. The lungs were carnified, but of a more florid colour than from hepatization, and appeared to resemble the lungs of an infant still-born. The inferior lobes, as well as one of the superior, were solid and did not crepitate; the other lobes were crepitant, but congested; no purulent deposits, however, were found, although carefully sought for. The foramen ovale was still pervious, although it had progressed towards obliteration. The opening was bounded by two curved margins, the superior being more deeply curved than the inferior; the long diameter was antero-posterior, taking the usual position of the heart into consideration, and measured one-fifth of an inch. The superior-inferior diameter was one-seventh

of an inch. The ductus arteriosus was impervious, but the obstacle to the passage of a probe through it was very slight indeed, and it was contracted and indurated. The left cavities of the heart contained some coagula, dark in colour, and rather firm and stringy. The thymus was not of unusual size, or otherwise abnormal.

Remarks.—The *post-mortem* examination fully bore out the diagnosis made during the life of the little patient, in every respect, as far as the nature and cause of the disease were concerned; but I had certainly expected to find extensive purulent deposits in the liver and lungs. These organs, it is true, exhibited the early signs of purulent absorption, but they had evidently suffered less from the pyæmia than usual. The current of purulent blood had found its way to the right auricle through the vena cava, without much troubling the hepatic circulation. It had here split into two portions: one, the minor, going to the lungs, and inducing solidification; the other, and greater, passing through the foramen ovale to the left auricle and ventricle to the aorta, whence it proceeded through the systemic circulation, and produced the local deposits found in the capillaries of the extremities, etc. The open condition of the foramen was not speculated upon, and overlooked until found at the *post-mortem* examination; but when discovered, it at once cleared up all difficulties. Had this aperture been closed, the intensity of the disease would have been shown in the lungs and liver without doubt; in the former principally, as the pus would have followed the course of the circulation: the liver also would have suffered, but in a minor degree, inasmuch as after birth the umbilical vein does not carry any blood into the vena porta.

In this instance, the phlebitis appeared to have crept along the lining membrane of the veins to some of the ramifications of the vena porta, and to have generated pus in its progress. These globules were then washed by the current of blood into the hepatic portal capillaries; and they would have induced deposits, had the infant lived a few days longer to give time for the development of pus, according to the physiological laws of its genesis, from the multiplication of its nuclei and nucleoli.

The umbilical vein was brought home, and its contents submitted to microscopical examination. Pus-globules were detected, and the existence of softened fibrin was also recognized by the action of reagents.

21. *Vaccination tested by the Experience of half a Century.*—This is the title of a paper read before the Royal Medical and Chirurgical Society, on the 9th of March last, by Dr. GEORGE GREGORY. The author commenced by observing that variolous inoculation was first heard of at Constantinople in 1700, but was not practised in England till 1721, and did not become general till 1750. In 1746, the Smallpox and Inoculation Hospital was established; and from this period variolous inoculation made favourable progress in the good opinion of the public throughout England. In France, however, during the same period, it met with neglect, notwithstanding the efforts of De La Condamine to convince his countrymen of the merits of inoculation; and prejudice extended so far, that the parliament of Paris, in 1763, prohibited the practice of variolous inoculation within the walls of that metropolis. The author then proceeded to notice the twofold object with which inoculation was performed—first, to banish from the mind all anxiety as to the taking of smallpox in after-life, by giving it at once; and, secondly, to insure a mild form of the disease, free at least from secondary fever. Inoculation was eminently successful in fulfilling and attaining these objects. Nevertheless, it undoubtedly had its disadvantages; it was essential to practise it in early life, before the infantine constitution could be known; and it thus often lighted up the dormant embers of scrofula. In 1798, the practice of variolous inoculation had been tested by the experience of half a century. In this year Jenner published his first treatise on Vaccine Inoculation, the advantages of which were at once confidently proclaimed; and in the following year seventy-three of the most eminent physicians and surgeons of the metropolis had signed a document, purporting “that persons who have had the cowpox are perfectly secure from the future infection of the smallpox.” The first claims of Jenner in favour of vaccination were singularly modest; but

in 1802, he announced to the House of Commons—first, “that vaccination is attended with the singularly beneficial effect of rendering, through life, the person so inoculated, perfectly secure from the infection of smallpox;” and, secondly, “that vaccination had already checked the progress of the smallpox, and, from its nature, must finally annihilate that dreadful disorder.” The quantity of smallpox that still prevails, and the practice of revaccination, almost universal, lead to the conclusion that these broadly urged claims in favour of vaccination have not been substantiated. Fifty years have passed since Jenner petitioned Parliament; and the author proposed, by the experience of this half a century, to test the merits of vaccination. But first, what is understood by vaccination? Something prophylactic of smallpox; or something identical with smallpox? Cowpox is a disease *sui generis*, and it cannot be said that he who has undergone vaccination has had smallpox in a mild form. A certain relationship exists between the two; but though variola by passing through the cow becomes cowpox, yet cowpox has never, in its turn, been converted into smallpox. Cowpox and smallpox are, at all times, and in all countries, clearly and readily distinguishable. The object of inoculation was to give the disease of smallpox, not to prevent it. The object of vaccination is to prevent, not to give, smallpox. Recurring smallpox, and smallpox after vaccination, are not merely different from each other, but actually opposed to each other. “If a person inoculated in childhood contracts smallpox in adult life, he suffers smallpox a second time, but a person taking smallpox after vaccination, takes the disease for the first time.” The enemies of inoculation, as well as the supporters of vaccination, had severally taken their stand on recurrent or secondary smallpox. De La Condamine declared that not one person in 10,000 ever took smallpox a second time. The fate of Louis XV. was alluded to, and it was shown that the king’s disease in early life (1724) was not smallpox, but a sharp yet brief attack of fever; that, living in the constant dread of smallpox, his distrust of inoculation was fearfully chastised by his death under a most aggravated attack of confluent smallpox. The author then noticed the extreme rarity of recurrent smallpox. The *Transactions* of the Society, extending through a period of forty-seven years, contained only one solitary case of recurrent smallpox. In many cases of so-called secondary smallpox, the evidence of antecedent variola could not be relied on, as a case narrated in the *Edinburgh Medical and Surgical Journal*, Oct. 1818, clearly established. Many of the cases which the author had inquired into were equally undeserving of credit. To arrive at a trustworthy conclusion, the details of both attacks should be carefully given. Very few medical men have in such cases witnessed both the primary and secondary seizure, and the author emphatically expresses himself as thoroughly convinced that the recurrence of smallpox is among the most rare events in the annals of medicine. The author then contrasted the occurrence of smallpox after vaccination. The records of the Smallpox Hospital throw much light on this subject. The following is a summary of the statistical details appended to the paper: During the last eleven years, 4092 persons have been admitted into the hospital, having smallpox, of whom 2168 had been vaccinated, and 1924 were unvaccinated; more than one-half of those admitted had been vaccinated in early life. The majority were of adult age, a few between 9 and 15; but below the age of 9 scarcely any vaccinated person was admitted. It would thus appear that the susceptibility to the variolous miasm among vaccinated persons increases as life advances. The reverse of that happens in the unvaccinated. In 1850–51, the total number of cases of smallpox admitted was 976, of whom 162 died, being at the rate of 16 per cent. Of the 976 admitted, 41 were infants below the age of 5, all unprotected, of whom 22 died; 101 were children between 5 and 15, majority unvaccinated, of whom 25 or one-quarter died; 685 were adults from 15 to 30; 109 beyond that age. Total, 794 adults; the larger proportion of these had been vaccinated, of whom 115 died, or 14 per cent. Of the total number admitted, 976, 613 professed to have been vaccinated; 569 exhibited cicatrices; of this latter section, 25 died, being at the rate of 4 per cent. In 1851, the proportion of persons admitted after vaccination amounted to 65 per cent.: it was only 44 per cent. in 1841. The increase is attributable to the extensive diffusion of vaccination. The mortality at the Smallpox Hospital,

during the last two years among the well-vaccinated section, has only slightly exceeded 4 per cent. The experience of half a century abundantly demonstrated that smallpox, though it has been largely controlled, will always abide among us, and that the notion of extirpating it is absurd and chimerical; and while acknowledging the immense benefits which have accrued from the splendid discovery of Jenner, vaccination had failed in establishing in the mind a confident feeling of security: it must be viewed as a beneficent provision of Nature, not for the extermination, but for the mitigation of smallpox. The author proceeded to show that inoculation had been abolished by Act of Parliament, in 1840; and that, though rigidly observed, smallpox was just as prevalent now as then; that the quantity of smallpox had not in the smallest degree been affected by the prohibitory clauses of that act; that, while this act prohibited inoculation, it did not render vaccination compulsory. Numbers therefore remained, as a pabulum whereon smallpox might prey. If the legislature could not or would not enforce vaccination, the restriction on inoculation should be removed. With proper precautions, inoculation might be safely adopted. Practised by other than authorized medical practitioners, it would of course be punishable as a misdemeanour by fine and imprisonment. With such restrictions it might be practised with perfect security. By far the larger proportion of mankind would continue to adopt the mild and safe process of vaccination; while others would prefer that measure which, occasioning a greater amount of immediate, abolished all prospective anxiety. Educated as the present race of medical practitioners were, and acting, as they would act, under the supervision of a discerning press, both public and professional, they would exercise their judgment to the entire satisfaction, and ultimately to the great and permanent benefit of the country.

Mr. GRAINGER said he wished to explain the reasons which had induced him to take a part in the present discussion. It was doubtless known to many present that the Epidemiological Society had appointed a committee to investigate the important subject of vaccination and smallpox, of which it happened that he was chairman. The committee had collected some very important evidence and facts; they had received the opinions and experience of a large number of medical practitioners in different parts of England; and it was deemed essential that some of the more important results should be made known on the present occasion; and he was requested to act as the organ of the committee. He had also, at the request of the General Board of Health, made an inquiry two years ago into the state of vaccination in the metropolis; and an additional reason for speaking was the deep interests involved in regard to the public health. Mr. Grainger proceeded to remark that, although he had no practical acquaintance with the subject, and would not for an instant place his own judgment, as regarded the special points of the investigation, in competition with that of Dr. Gregory; yet that as this was a question resting essentially on evidence and facts, any one accustomed to deal with such inquiries was competent to take part in the discussion. It was obvious that the important points raised by Dr. Gregory could not be determined by any amount of hospital experience: and yet it appeared that a considerable part of the data relied on were derived from the Smallpox Hospital. The statistics of that institution, therefore, became important. The following table is from a paper of Dr. Gregory's, in the *Medical Times* for 1849:—

	Total.	Deaths.	Percentage of Deaths.
Unprotected cases	254	103	40
Vaccinated { with cicatrices	365	38	10
{ without do.	63	25	39
Total vaccinated	428	63	14
Previously inoculated	3	1	33

It is important to notice that in 28 out of 168 deaths, one-sixth of the whole, there were symptoms of superadded hospital disease, especially erysipelas facialis; and the weekly returns of the Registrar-General proved that these super-added hospital diseases still continued. Now, it is impossible to doubt that the state of things which induced so much evil must have operated most injuriously

on the whole of the patients; that cases which would have been mild became severe; that those which would have been discrete became confluent, and that thus the general mortality was much raised. The following evidence, taken without selection from thirty returns received from medical practitioners, shows a very different result:—

	Total.	Deaths.	Percentage of Deaths.
Natural smallpox in unprotected	1731	361	20.85
Smallpox after vaccination	929	32	3.44

In an important report of the "Norwich Board of Health," on a severe epidemic of smallpox, which occurred in that city in 1845, it is stated that the mortality from smallpox in the unprotected was $12\frac{1}{2}$ per cent., and in the vaccinated only 3 per cent.; and investigation rendered it doubtful, in the latter class of cases, whether all had been properly under the influence of cowpox. The same report gives the results of the personal visitation of 531 families, comprising 2170 individuals. Of these, 1664 had smallpox, of whom 1536 had not been vaccinated, while of 506 who escaped, only 84 had not been vaccinated. In the last number of Dr. Copland's *Dictionary of Practical Medicine*, it is stated that, after half a century has elapsed since the discovery of vaccination, "the middle of the nineteenth century finds the majority of the profession in all latitudes and hemispheres doubtful as to the preponderance of advantages, present and prospective, to be obtained either from inoculation or from vaccination." In reply to this assertion, and as having an immediate bearing on the present discussion, he would state that 430 replies to the questions issued by the Epidemiological Society, with the object of ascertaining the opinion of the profession on the subject of vaccination, had been carefully examined by Dr. Seaton; and, be it observed, without selection: and of this large number of medical practitioners, one only had expressed any doubt of the protective power of vaccination; and this one doubt only amounted to this—that, having been himself inoculated in infancy, this gentleman felt more secure than if he had been vaccinated. Having this concurrent testimony in favour of vaccination, he must say that Dr. Copland, in his opinion, had hazarded a very strong statement on very insufficient grounds. He might add that he had examined a large number of the annual returns made by medical officers to the poor-law board, and that he had not found a single expression indicative of doubt on this point. The gentlemen at that board whose duty it was to inspect the annual returns received from every union in the kingdom also stated that he had in no one instance seen any adverse opinion recorded. It is, however, obvious that this great question, involving not only the happiness and welfare of the people of this country, but of the world at large, must be finally settled by an appeal to facts and to the experience of long periods resting on large data. Dr. Waller Lewis had prepared the following table, showing the decline of smallpox in London from 1750 to 1850, taken from "Marshall," and other records in the office of the Registrar-General:—

Average of deaths from smallpox in London per 1000 deaths, for the ten years ending 1752, 89; for the ten years ending 1756, 95; for the ten years ending 1770, 108; ditto, 1780, 107; ditto, 1790, 94; ditto, 1800, 77; ditto, 1810, 63; ditto, 1820, 41; ditto, 1830, 32; ditto, 1840, not known; ditto, 1850, 16. Average number of deaths from smallpox per annum in London for the ten years ending 1750, 2036; for the ten years ending 1850, 498.

The number of deaths from smallpox in the former period is to the latter as 4 to 1, while the population of the former period was to the latter probably as 1 to 4.

Dr. Lewis had also drawn up a table, showing similar results in Prussia.

Mortality from Smallpox.

IN BERLIN (Caspar's Medical Statistics).

	Total Deaths.	Smallpox Deaths.	Per 1000 Deaths.	Ratio.
1783—1791=8 yrs.	47,367	4315	91	10
1814—1822=8 "	51,389	535	10.5	1

IN ALL PRUSSIA (Official Statistical Tables for 1849).

	Total Deaths.	Smallpox Deaths.	Per 1000 Deaths.
In 1825	327,354	1893	5.8
" 1834	424,013	6625	15.6
" 1843	444,573	4508	10.2
" 1849	498,862	1760	3.5

In the *Réglement Berlin*, Oct. 31, 1803 (containing the regulations for medical and other public offices, in respect of vaccination), it is said that smallpox caused, on an average, 40,000 deaths a year in Prussia. Prussia had at that time a population of ten millions. In 1849, among a population of more than sixteen millions, smallpox killed 1760 persons. Therefore, smallpox was thirty-seven times more fatal in Prussia, in 1803, than in 1849.

The high mortality shown in these tables, prior to the discovery of vaccination, applies, it should be remembered, to that period of the last century in which, at least in England, the practice of smallpox inoculation, which it is now suggested should be revived, had been very actively carried out; and these are the results. He would now state the experience of 435 medical practitioners, relating to themselves personally, and therefore affording most reliable evidence. Of these 435 gentlemen—

Had been vaccinated, much exposed to smallpox, and escaped	266
Vaccinated, not much exposed, and escaped	34
Vaccinated, and taken smallpox	38
Inoculated, and escaped smallpox	69
Inoculated, but have taken smallpox	5
Inoculated, and taken cowpox accidentally	3
Neither vaccinated nor inoculated, and have taken smallpox	20

With the exception of two, all the cases of smallpox after vaccination were "mild." In the five cases of smallpox after inoculation, one is described as very severe. As so much has been said of the frequency of smallpox after vaccination, and of the great mortality in such cases, the results obtained from the examination of 356 replies sent to the Epidemiological Society, are of great value—

- 182 state expressly that *they have never seen* a death from smallpox after vaccination.
- 3 state respectively that the cases have been "few," "very few," and "frequent."
- 44 state their experience in numbers, and give an aggregate of 70 deaths.
- 127 give no statement of their experience on the subject.

The following table gives the experience of thirty practitioners on the respective mortality of (1) Natural smallpox; (2) Smallpox after smallpox; (3) Smallpox after vaccination:—

	Cases.	Deaths.	Percentage of Deaths.
Natural smallpox	1731	361	20.85
Smallpox after smallpox	58	22	37.92
Smallpox after vaccination	929	32*	3.44

In the replies with which the Epidemiological Society has been favoured, great stress is laid on the manner in which the operation of vaccination is performed; on the importance of fresh and efficient lymph; and on the careful watching of each case—precautions which it is certain are but too often neglected. He had received from Mr. Marston, the resident medical officer to the Smallpox Hospital, a statement highly to the credit of that institution, and proclaiming, in unmistakable language, the importance of good vaccination. Mr. Marston states, that during the last sixteen years he had vaccinated about 40,000 persons; and that of this large number not one had subsequently come to the hospital with smallpox. Now, although many of these persons must have died

* In seven of these, the evidence of vaccination was not satisfactory; and in six others, the death is ascribed to superadded diseases.

or quitted London, still the fact that none had up to this time been known to be attacked, was most important. Allusion has been made to the heavy mortality still caused by smallpox, the inference being that vaccination has failed to produce the great results anticipated by its advocates. It has been already plainly demonstrated that the mortality since the discovery of the illustrious Jenner has immensely diminished, especially where vaccination, as in Prussia, has been extensively diffused; and if, as is but too true, many victims still are sacrificed in these kingdoms, it is due to the enormous neglect of vaccination, not to its failure. There is no point upon which it is more requisite to convey right information to the public than upon this; and even as regards the profession there is great need that the actual facts should be known. Although there are a National Vaccine Establishment, and acts of Parliament for promoting vaccination, there is nothing in this country deserving the name of a national system. The institution just named is merely engaged in supplying lymph; it has no power to secure vaccination. The Poor-law Board, which is charged with the administration of the act of 1840, has no means of knowing where vaccination is neglected till the end of each year—consequently, when, as is constantly happening, attacks of smallpox have occurred and swept off its victims. Information is indeed furnished by the returns of the registrar-general of any severe attack of smallpox, but then, this is only known when it is too late—after the mischief has been done; these are inherent defects in the act, and do not depend on the administrative body. He had, through the courtesy of the Poor-law Board, had an opportunity of examining, with Dr. Lewis, some hundred returns from all parts of England and Wales, and a few of the facts were set forth in the following tables:—

Evidence of great neglect of Vaccination, as shown by the Number of Vaccinations under One Year of Age, and the Number of Births, for 1851.

	Vaccinations.	Births.	Percentage of Vaccinations.
In 13 unions in London	4641	21,598	21.
In 31 unions in the country	706	7674	9.2
Teesdale	70	593	11.8
East Stonehouse	1	438	
Bideford	22	567	3.8
Welwyn	4	84	4.7
Hitchin	85	905	9.4
Northleach	4	339	1.1
Loughborough	61	968	6.3
Camelford	1	388	
Redruth	378	1925	19.
Kettering	12	644	1.8
Cardigan	34	531	6.4
Samford	2	447	
Ipswich (1850)	56	1153	4.9
Thingor (1850)	10	586	1.7
Arundel	0	73	

Evidence of previous great neglect of Vaccination from the EXCESSIVE NUMBERS of Vaccinations in One Year, as contrasted with the Births of that year. (From years 1850-51.)

		Total Vaccinations in the Year.	Births in the Year.
St. Alban's Union, 1850		151	562
Do. 1851		1750	581
Bromyard 1850		679	342
Windsor "		1507	480
Ross "		613	448
Watford "		915	588
Hatfield "		423	227
Maldon "		809	678
Tregaron "		557	301
Do. 1851		405	308
St. Asaph 1850		727	493

The last table is very instructive, as it shows what can be accomplished when the local authorities are alarmed by the prevalence of smallpox, or are stimulated by the remonstrances of the Poor-law Board. It is stated, in a report of that Board, that in 1848 the number of persons vaccinated under one year of age by the public vaccinators in the whole of England amounted to 33 per cent. of the total births; and yet it is seen that in various unions not more than 2, 3, or 4 per cent. are so vaccinated. But there is other evidence of the almost incredible neglect of vaccination. It is stated by Dr. Gregory, in his valuable Lectures on Eruptive Fevers, that, up to the age of eight years, "the protective power of cowpox may, for all practical purposes, be considered as complete." It may therefore be assumed that all those who perish under five years of age have not been vaccinated. In a very valuable report of Mr. Wilde, of Dublin, contained in the report on the census of Ireland for 1841, it is stated that of the 56,006 deaths from smallpox which occurred in that country in the decennial period of 1831-41, no fewer than 79 per cent., or 45,824, were those of children under five years of age. In this country the ratio is pretty nearly the same; thus, Dr. Gregory states, in his lectures, that of 9762 persons who died of smallpox in England, in 1837-38, the deaths under five years were 7340, or 75 per cent. of the whole. In facts like these, exhibiting not the failure, but the neglect of vaccination, is the true cause of that mortality of which we have heard to-night to be discovered. Although he regretted he was compelled, in the discharge of the duty imposed upon him, to trespass so long on the patience of the meeting, it was impossible he could sit down without alluding to the proposal that had been made that evening for the revival of variolous inoculation. It might be supposed, from the way in which that procedure had been lauded, that it was, under proper management, a safe and harmless measure; but the experience of it in the last century gave very different results. In this country it was for a long time strenuously opposed by the profession as well as by the public; and when at length it was sanctioned, the ravages of smallpox still continued, and to such an extent, that in the thirty years following the general use of inoculation, from 1770-1800, the deaths, in London, from this disease, amounted to 92 in 1000 from all causes. The Faculty of Medicine of Paris formally condemned inoculation; and so late as 1763, it was prohibited by a royal ordinance. In the interest of the public health, it is right and proper to inquire of those who would revive the practice of inoculation, what security they propose, to guard the unprotected from the variolous poison, when it shall be diffused systematically over the country, and shall have penetrated and be maintained in every nook and corner of the land? To this question a precise answer should be given. It has been shown that at present there are multitudes of unvaccinated persons; and it is certain that no law could enforce universal inoculation; so that if that practice, which has been wisely prohibited by the legislature, should ever be revived, there would be thousands of unprotected persons in all parts of the country, many of whom would become the ready victims of natural smallpox. It is deeply to be regretted that, at the exact time when strenuous efforts are about to be made by the Epidemiological Society to secure the more general vaccination of the people of this country, so earnestly desired by the profession and so essential to the common weal, doubts as to its protective power should be promulgated and made public. In one thing he cordially agreed with Dr. Gregory, and that was in the absolute necessity for a searching inquiry into the whole system of vaccination as at present conducted, the state of which was disgraceful to the country of the illustrious Jenner. It was a thing all but incredible, that in the short space of ten years, 45,000 children were, in Ireland, allowed to be sacrificed at the shrine of ignorance, prejudice, and apathy; when, as all parties admitted, not one need have perished, so far as smallpox was concerned, if only that great remedy, provided as it were by the hand of God himself, had been applied.—*Lancet*, March 20, 1852.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

22. *Curative Treatment of Aneurism of the Aorta.*—We reproduce such portions of a valuable practical essay on this subject, by Dr. O'B. BELLINGHAM, as most plainly set forth his mode of treatment.

The indications of treatment in aneurism are—

1. To diminish the distending force of the blood from within, by which the further enlargement of the sac will be prevented, and it will be placed under a favourable condition to contract.

2. To endeavour to strengthen the parietes of the sac by favouring the gradual deposition in its interior of the fibrin of the blood which passes through it, by which the risk of its rupture will be diminished.

3. To endeavour to maintain the continued deposition of fibrin in the sac, until it is filled, and no longer permits the entrance of blood.

4. To bring about these results without deteriorating the quality of the blood, or diminishing too much the patient's strength.

The plan of treatment which appears to be best calculated to fulfil the indications in view is almost essentially dietetic. It consists in limiting the patient, for a given period, to the smallest quantity of fluid possible; in diminishing considerably likewise the solid aliment; in confining the patient at the same time to bed, and endeavouring to maintain the mind in as tranquil a state as possible. Dr. Bellingham is neither an advocate for bleeding or purgatives (except occasionally, if required), nor for diuretics or digitalis, or any of the other medicines which have been used in this disease, with the exception of opium, and this only when sleep is prevented by pain.

By confining the patient to the horizontal posture, the circulation is tranquillized, and the heart's action becomes slower. When this is combined with a small quantity of solid nutriment, and a still smaller quantity of liquid, the heart's action will become slower, and the pulse compressible, small, and soft. Its effect upon the blood will be to render this fluid thicker, as the watery portions are excreted by the kidneys and skin. Thus, less blood will pass through the aneurismal sac, it will be transmitted with less force, and in a diminished stream, while its quality will be improved; all which circumstances are favourable to the deposition of fibrin in the aneurismal sac; and as the muscles are not exercised, there is no waste of fibrin in supplying them.

The diet constituted an important item in the treatment of aneurism advocated by Albertini and Valsalva, where a very low diet was combined with copious and frequent bloodletting. Some modern writers, likewise, recommended certain restrictions in this particular, but they have been content with general directions under this head. We shall not be able to effect much, unless precise directions as to the exact quantity and kind of food are laid down. Dr. Bellingham would limit the patient to three meals a day, the morning and evening meal to consist of two ounces of liquid, and the same of solid nutriment; the mid-day meal of from two to four ounces of liquid, with from two to four ounces of solid. The liquid may consist of milk or tea, the solid of bread; and at the mid-day meal, of bread and meat in equal quantity. No deviation from this dietary should be permitted, and it must be persevered in for a fixed period—six weeks or a month at least; when it may gradually be improved. If the patient is weighed on commencing it, and this done occasionally afterwards, we shall have a guide as to the advisability of continuing it, or of improving it.

This plan of treating aortal aneurism is not proposed on purely theoretical grounds. It is applicable not only to aneurism of the thoracic and abdominal aorta, but to all those cases where the sac springs from a branch of this vessel, and is beyond the reach of surgical interference; as to aneurism of the innominate, of the subclavian, and of the carotid at the root of the neck, as well as to aneurism of the common iliac. Dr. Bellingham has employed it, but for a shorter period, with much advantage, as a preliminary to the application of compression in popliteal aneurism.

In a mode of treatment such as this, success will of course depend in a great measure upon the perseverance with which it is carried out. It is, therefore, necessary that the patient should be made aware of the dangerous nature of his disease; as he will be more likely to submit cheerfully to the restriction. Indeed, unless he co-operates in carrying out the treatment fully and fairly, it can never be effectually maintained.

It might be objected that the tendency of so very restricted a diet is to produce a state of anæmia; but this result is scarcely to be feared, unless blood-letting is employed.

Dr. Bellingham relates a case in which this treatment was carried out with great success. We subjoin the state of the patient at the commencement, and at the end of the treatment.

CASE. P. D., aged 50, admitted April 19, 1849. He now suffers principally from pain and cough: the pain commences at a point at the upper part of the right side of the chest, near the sternum, where a pulsation is visible: it darts through the chest to the scapula on the same side, and extends also to the axilla and right arm, sometimes reaching to the fingers, generally not extending below the elbow. He describes this pain as being most severe at night. He complains of pain on pressure over the site of the aneurism; he cannot bear percussion there, and the application of the stethoscope even causes pain; this is likewise much increased by coughing, but particularly by sneezing.

For the last three weeks, he has been unable to lie upon the left side; can lie upon the right, but he prefers lying upon the back.

On examination, a pulsation is felt, and seen to the right of the sternum, above and below the junction of the cartilage of the third rib with this bone; no tumour is prominent upon the surface, but the pulsation is well marked. This part is very painful to the touch, and to it particularly the patient refers the pain which he suffers on coughing. On placing the hand on it, the pulsation is felt to be double; on placing one hand upon the sternum and the other upon the right scapula behind, a heaving of the chest is perceived with each ventricular systole.

On auscultation over the aneurism, a loud double sound is audible, which is synchronous with the double impulse, and resembles accurately the double sound of the heart; it diminishes in intensity as we approach the heart; no murmur accompanies either aneurismal sound. The heart's action is strong, and felt over a large surface; the impulse of the apex is lower down than natural, towards the epigastrium; its sounds normal. The pulse 80, regular, having the same strength in both wrists; the inspiration is bronchial over the site of the aneurism; the expiration not altered.

June 28. The patient has been up now for some days; he feels weak, but makes no complaint of pain or uneasiness; the pulse is 80, and small in the sitting posture; the carotids are observed, and felt to pulsate strongly; slight jugular pulsation is observed above the clavicles; no pulsation is visible to the eye at the site of the aneurism, but a slight movement is perceptible in that part of the chest when the hand or stethoscope is laid on it, but is unlike that of an aneurism. On auscultation, the double sound is well marked over the seat of the aneurism; no bruit accompanies the first sound, but a slight bruit is audible at one point with the second sound.

He was soon discharged from the hospital; and, when seen by Dr. Bellingham recently, he had continued in a satisfactory state, and had been able to follow his employment as a shoemaker from the time of his dismissal.

The following are the CONCLUSIONS with which Dr. Bellingham sums up his paper:—

1st. Aneurism of the aorta is not necessarily an incurable disease.

2dly. It appears to be more amenable to curative treatment than is ordinarily supposed.

3dly. Treatment ought always to be especially directed to this object.

4thly. When a spontaneous cure occurs, it is always by the gradual deposition of the fibrin of the blood in layers within the aneurismal sac until it is filled up.

5thly. If we hope to succeed in effecting a cure, it must be by imitating the mode in which Nature brings this about.

6thly. In order to favour the gradual deposition of fibrin, we should aim at diminishing the mass of blood, and lessening the strength and rapidity of the current through the aneurismal sac.

7thly. This can only be indirectly accomplished by acting upon the general circulation.

8thly. Neither bleeding, purgatives, diuretics, digitalis, nor the various other remedies which have been employed in this disease, can be depended upon for producing these effects.

9thly. An extremely restricted diet, particularly in fluids, continued for a certain time, appears to have the effect of rendering the pulse small, compressible, and slow, and at the same time diminishing the mass of blood.

10thly. The cases related afford evidence that these results may be brought about by treatment conducted upon the foregoing plan.

11thly. This method of treatment, to prove effectual, must be steadily and perseveringly carried out, and must be continued until a decided impression is made upon the disease.

12thly. It is adapted not only to aneurism of the thoracic and abdominal aorta, but to aneurism in any of the immediate branches of these vessels. And if employed as a preliminary to compression, pain will be diminished, and the duration of the treatment considerably abridged.—*London Journ. Med.*, May, 1852.

23. *Popliteal Aneurism cured by Compression*.—T. STEPHENS, Esq., communicated to the Newcastle Pathological Society the following case: A fisherman, aged 50, came under his care in September last, with a popliteal aneurism. The tumour at that time was the size of a pullet's egg cut in two, felt hard to the touch, and pulsated strongly, which pulsation was easily stopped by pressure on the femoral artery. The patient being unwilling to undergo an operation, Mr. T. determined to make a trial of compression. Two pads were fixed on the femoral artery by means of elastic ring tourniquets, but not so tight as to completely control the pulsation in the tumour. On the following day, the upper one was slackened, and the two were afterwards alternately tightened and loosened, for about twelve hours at a time. In about seven days, the foot and ankle became so tender and painful that he begged the apparatus should be taken off. Mr. T., however, continued it with a diminished pressure. On the eighth day, the pulsation had diminished, but not ceased. On the ninth day Mr. T. took off the apparatus, and re-applied it on the tenth. On the eleventh, it had somewhat increased; on the twelfth, it was scarcely perceptible; and, on the fifteenth, no pulsation was to be felt. The leg and foot became extremely cold and pale, but the heat was gradually restored by means of friction and flannel bandages. On visiting him about three weeks after, Mr. T. found the tumour nearly gone, and the patient has now resumed his employment.—*Med. Times and Gaz.*, April 3, 1852.

24. *Account of the Dissection of a Subject in whom two Popliteal Aneurisms had been treated by Compression four years previously; with some Remarks, and a Table of the Cases in which Compression has been successfully employed*.—This is the title of an interesting article in the *Dublin Medical Press* (Dec. 3, 1851), by O'B. BELLINGHAM, M.D. The subject of the cure was a man 34 years of age, who had been affected with popliteal aneurism in both limbs, which had been treated by compression. The patient's death was the result of aortal aneurism. We have not space to give the details of the case, but the more important points are furnished in the following observations which are appended:—

These pathological specimens illustrate in the one limb the mode in which compression effects the cure of aneurism, and in the other, the subsequent changes which ensue by which the recurrence of aneurism, at the same part of the artery, is effectually prevented.

This patient lived above four years after the treatment of the two aneurisms in opposite limbs; upon the side that the aneurism had been cured, and where, after the cure, a solid hard tumour, of the size and shape of a racket-ball, marked the site of the aneurismal sac, we now find no remains of an aneuris-

mal sac : the sac and the artery at the part are consolidated into one, and merely a solid rounded ligamentous cord marks the site of the aneurism and of the part of the obliterated popliteal artery from which it sprung.

In the opposite limb, where the compression was kept up for a much shorter period, and where the aneurism did not cease to pulsate, we find the aneurismal sac greatly diminished in size, its walls very thick, its interior nearly filled by fibrin, and the artery at the part not obliterated, but permitting a current of blood still to pass through it.

On previous occasions, I have had the opportunity of exhibiting to the members of the Society preparations illustrating the results of compression for the cure of aneurism from subjects who died of other diseases, either subsequent to the cure of the aneurism or before the pulsation had ceased. The present differs from any hitherto recorded, and is, perhaps, more important, as it bears upon a point which we had not the opportunity of determining heretofore, while it tends, as much as any single case can, to confirm all that has been said of the advantages of this method of treating aneurism.

In the details of this case, I have said that, after compression had been employed for a time upon the right lower extremity, it was discontinued before the pulsation of the aneurism had ceased, in consequence of the patient being obliged to return to his employment. Notwithstanding that the pulsation continued, the tumour not only did not increase subsequently, but actually diminished in size, although the patient had to work at a very laborious employment, in which he was obliged to lift and carry heavy weights; and during upwards of four years that intervened between the period at which the pressure was discontinued and the patient's death, it never caused the slightest inconvenience, and he continued to work until the enlargement of the thoracic aneurism compelled him to desist.

The post-mortem examination shows why this was so: we find the aneurismal sac contracted and diminished in size, its parietes much thickened, and its cavity in great part filled up by fibrin deposited in concentric layers. A small portion of its interior still permitted the entrance of the blood, which passed down the popliteal artery, the pulsation of which communicated to the sac gave the impulse which was felt at the part during the patient's life.

It is a point of some interest to determine whether an external aneurism can be considered to be cured, although the channel of the artery, at the seat of the disease, is not obliterated, and a current of blood continues to pass through the vessel. We know that when aneurism of the arch of the aorta undergoes a spontaneous cure, the sac alone is filled up, while the artery, for an obvious reason, continues pervious afterwards. Now, the examination of this preparation, combined with the history of the case, affords evidence that popliteal aneurism may be so far cured that the sac can scarcely enlarge again, although there is no obliteration of the artery at the seat of the disease, and likewise that this desirable result may be brought about by making compression upon the artery on the cardiac side of the sac.

The cause of the enlargement of an aneurismal sac, in any situation, is evidently the distension from within, caused by the impulse communicated to the blood by the systole of the left ventricle. If this distension can be diminished, or prevented altogether, the aneurismal sac cannot enlarge; but it will, on the other hand, rather diminish in size. Now, by making pressure upon the artery leading to an aneurismal sac, we can take off this distension, and render the sac quite flaccid, and by continuing the compression we can maintain the sac in this state for an indefinite length of time. Moreover, when the current of blood through the sac is materially diminished in force, velocity, and volume, another agent almost always comes into operation; the fibrin of the blood, in its passage through the sac, is deposited upon its interior, by which the parietes of the sac are still further strengthened.

It would appear, indeed, from the results of one or two cases, where the disease was of very recent origin, that, when compression upon the artery above is steadily maintained, the aneurismal sac may gradually shrink until reduced to a very small size; and if the precaution is taken of not allowing a full current of blood to pass down the artery for a certain period, the remains of the

shrunk aneurismal sac ultimately are scarcely to be felt, particularly if its site was the popliteal space, or Hunter's canal, where the vessel lies at some distance from the surface.

It can scarcely, then, I think, be doubted that aneurism, in an extremity, may be so far cured that it can neither enlarge again nor give way, although the blood continues to pass through the artery from which it springs, and an impulse continues to be felt at the part, owing to the pulsation of the artery being communicated to the sac. In the present case, there was an interval of above four years between the discontinuance of compression and the death of the patient; during which time, although the pulsation continued, the patient was able to follow a laborious employment, and never suffered the slightest inconvenience from the aneurism. Indeed it is not improbable that the femoral artery has been unnecessarily tied in some cases, at least under similar circumstances, where, if a little delay had been permitted, it would have been found that the aneurism had no disposition to increase in size.

* * * * *

The preparation from the opposite limb of this patient, in which the aneurism had been cured, is also of some interest, as being an additional example of the subsequent changes which ensue after the cure by compression, by which Nature effectually prevents the recurrence of aneurism at the same part of the vessel; as well as because it shows, in some degree, within what period these changes are brought about. The treatment of the aneurism in this limb was, as I have remarked, rather tedious, extending over a period of three months; after the cure, the site of the aneurismal sac was marked by a very solid, hard tumour, resembling a racket-ball in shape and feel—a proof that the sac was filled with solid fibrin. About three years subsequently, upon a careful examination of the limb, no trace of this tumour remained; and now, after four years, we find that the aneurismal sac, and the fibrin with which it was filled, have been entirely absorbed, and merely a solid ligamentous cord marks the site of the obliterated popliteal artery and aneurismal sac.

The last point illustrated by this preparation, to which I wish to call attention, is the condition of the femoral vein. It will be seen that this vein, throughout its whole course in the thigh, as well at the points at which the compression had been made, as at those where no pressure had been applied, preserves its natural healthy appearance; its valves are sound, there is no thickening of its coats, and no alteration of any kind is perceptible either upon its exterior or in its interior. Now, the treatment of the aneurism in this limb extended, as I have said, over a period of about three months—viz., from the middle of October to the middle of January; and during much of that time the pressure was made upon the middle and lower third of the thigh, where the artery and vein are very closely united, and the latter was of course necessarily compressed with the former.

It has been gravely proposed that, in using pressure for the cure of aneurism, the pad of the compressing instrument should be so applied as to avoid making pressure on the femoral vein; any one, however, who has dissected the parts, must know that this would be utterly impracticable; and every one who has tied the femoral artery knows that one of the chief difficulties in the operation consists in avoiding injury to the vein, in consequence of its close proximity to the artery; indeed, Mr. Porter has shown that, in cases of popliteal aneurism, "The femoral vein is always more closely adherent to the artery than in the healthy subject;" and this is evidently the case in the preparation before us.

I have myself had the opportunity of examining the condition of the femoral vein after the cure of popliteal or femoral aneurism by compression, in several instances in addition to the present; and in none did this vein present the slightest change, proving that it bears pressure equally as well as the artery, and that if the treatment is properly conducted, neither vessel can suffer any injury from the compressing instruments.

Dr. B. gives the following list of cases, which have been published, of aneurisms healed by compression:—

List of Cases of Popliteal Aneurism successfully treated by Compression between 1842 and 1851.

No.	Surgeon.	Sex.	Age.	Occupation.	Where treated.	Where reported.	Result.	Observations.
1	Hutton	Male	30	Labourer	Richmond Hospital	Dublin Medical Press	Cured.	This patient subsequently laboured under femoral aneurism in the opposite limb, which was also cured by compression. He died of aortal aneurism.
2	Cusack	do.	55	Tanner	St. Vincent's Hospital	do.	do.	
3	Bellingham	do.	32	Servant				
4	Harrison	do.	29	Carpenter	Jervis-street Hospital	Rept. British Association	do.	This patient has died since of cerebral disease.
5	Kirby	do.	28	Baker	do.	Dublin Medical Press	do.	
6	Allan	do.	32	Seaman	Haslar Hospital	Lancet	do.	
7	Cusack	do.	26	Gentleman	At patient's residence	Dublin Medical Press	do.	This patient died subsequently of aortal aneurism.
8	Greatrex	do.	27	Soldier	Regimental Hospital	Proc. Med.-Chir. Soc.	do.	
9	Porter	do.	29	Tailor	Meath Hospital	Dublin Quarterly Journ.	do.	
10	Porter	do.	20	Medical man	do.	do.	do.	This patient had been operated on some years previously for popliteal aneurism in the opposite limb.
11	Jolley	do.	38	Labourer	Torbay Dispensary	Provincial Med. Journal	do.	
12	Ferrall	do.	32	do.	St. Vincent's Hospital	Dublin Hospital Gazette	do.	
13	Macdonnell	do.	32	do.	Richmond Hospital	Dublin Medical Press	do.	This patient had aneurism in the opposite limb, and has died since of aortal aneurism.
14	Dartnell	do.	38	Soldier	Gen. Hosp., Fort Pitt	London Medical Gazette	do.	
15	Cusack	do.	33	Medical man	Steevens' Hospital	Dublin Quarterly Journ.	do.	
16	Humfroy	do.	43	Soldier	Mil. Inf., Phoenix Park	Dublin Medical Press	do.	This patient had aneurism in the opposite limb, and has died since of aortal aneurism.
17	Storks	do.	32	Tailor	At patient's residence	Lancet	do.	
18	Ferrall	do.	37	do.	St. Vincent's Hospital	Dublin Quarterly Journ.	do.	
19	Storks	do.	24	Brewer	At patient's residence	Lancet	do.	In this case the compression was made directly upon the aneurismal sac.
20	O'Brien	do.	34	Butcher	Adelaide Hospital	Dublin Medical Press	do.	
21	Armstrong	do.	26	Sailor	Naval Hosp., Plymouth	Lancet	do.	
22	Tufnell	do.	27	Sawyer	At patient's residence	Dublin Medical Press	do.	Nos. 22 and 24 refer to the same patient: he subsequently laboured under femoral aneurism, which was also cured by compression.
23	Cusack	do.	30	do.	Steevens' Hospital	Dublin Quarterly Journ.	do.	
24	Tufnell	do.	25	do.	At patient's residence	Dublin Medical Press	do.	
25	Hutton	do.	32	do.	do.	Dublin Medical Press	do.	In this case the pulsation ceased after compression had been maintained for twenty-three hours.
26	Banon	do.	27	Labourer.	Jervis-street Hospital	do.	do.	
27	Bellingham	do.	44	do.	St. Vincent's Hospital	Proc. Med.-Chir. Soc.	do.	

List of Cases of Femoral Aneurism successfully treated by Compression between 1842 and 1851.

No.	Surgeon.	Sex.	Age.	Occupation.	Where treated.	New York Hospital	Trans. Amer. Med. Assoc.	Cured	Observations.
28	Rodgers	Male	47	Sailor	New York Hospital	do.	do.	do.	The compression was made in this case by the fingers of relays of assistants.
29	Mutter	do.	41	Bookkeeper	do.	do.	do.	do.	In this case the artery had been tied some time previously, but pulsation had returned in the sac.
30	Knight	do.	48	do.	do.	do.	New York Journal	do.	In this case the pressure was made directly upon the tumour.
31	Hosack	do.	55	do.	do.	do.	do.	do.	In this case the pulsation ceased after compression had been maintained for fifteen hours.
32	Paget	do.	27	Surgeon	Tyrone Infirmary	do.	do.	do.	
33	Thompson	do.	30	Boatman	London Hospital	do.	do.	do.	
34	Ward	do.	45	Lighterman	do.	do.	do.	do.	
35	Bennett	do.	30	Blacksmith	do.	do.	do.	do.	
36	Wood	do.	33	Carman	Bellevue Hospital	do.	do.	do.	
37	Wood	do.	30	Carpenter	do.	do.	do.	do.	
38	Humphrey	do.	24	Sailor	Addenbrooke's Hospital	do.	do.	do.	
39	Allan	do.	27	Pensioner	Naval Hospital, Haslar	do.	do.	do.	
40	Ward	do.	36	Hostler	Huntingdonshire Infr.	do.	do.	do.	

No.	Surgeon.	Sex.	Age.	Occupation.	Where treated.	Where reported.	Result.	Observations.
1	Liston	Male	39	Tin-worker	University College Hosp.	Lancet	Cured	
2	do.	do.	53	do.	do.	do.	do.	
3	Bellingham	do.	33	Servant	St. Vincent's Hospital	Dublin Medical Press.	do.	This patient, who laboured under popliteal aneurism in the opposite limb, which was likewise cured by compression, died subsequently of aortal aneurism.
4	Mackern	do.	30	Master of canal boat	do.	Lancet	do.	
5	Humfrey	do.	31	Soldier	Mil. Inf., Phoenix Park	Dublin Medical Press.	do.	
6	Smyley	do.	48	Schoolmaster	Meath Hospital	do.	do.	
7	Tutnell	do.	29	Sawyer	City of Dublin Hospital	Treatise on compression.	do.	This patient died suddenly three years afterwards, probably of internal aneurism.
8	Colles	do.	29	Glassblower	Steevens' Hospital	do.	do.	
9	Hargrave	Female	23	Dress-maker	City of Dublin Hospital	Dub. Quarterly Journal	do.	
10	Watson	do.	28	do.	New York Hospital	do.	do.	
11	Parrott	Male	38	Soldier	Orl. Hosp., Woolwich	Trans. Amer. Med. Assoc.	do.	
12	Briscoe	do.	22	do.	do.	Lancet	do.	
13	Watson	do.	27	Farmer	New York Hospital	do.	do.	
14	Dartnell	do.	35	Soldier	Regt. Hosp., Chatham	New York Journal Medical Times	do.	This patient laboured under popliteal aneurism in both limbs previously, which had been cured by compression.

List of Cases of Brachial Aneurism successfully treated by Compression.

No.	Surgeon.	Sex.	Age.	Occupation.	Where treated.	Where reported.	Result.	Observations.
1	Cusack	Female	40	Soldier	Steevens' Hospital	Treatise on Compression by Mr. Tuffnell	Cured	Traumatic aneurism from gunshot wound.
2	Hutton	Male	34	Farm servant	Richmond Hospital	Dublin Medical Press	do.	Traumatic aneurism from wound in venesection.
3	Johnston	do.	34	Blacksmith	do.	American Med. Journal	do.	Traumatic aneurism from wound in venesection.

List of Cases of Radial or Ulnar Aneurism successfully treated by Compression.

No.	Surgeon.	Sex.	Age.	Occupation.	Where treated.	Where reported.	Result.	Observations.
1	Crampden	Male	11	Blacksmith	At patient's residence	Dublin Medical Press	Cured	Traumatic aneurism of the radial from wound.
2	Syme	do.	30	do.	do.	Edin. Monthly Journal	do.	Non-traumatic aneurism of the radial.
3	Veljeau	do.	30	Coach-guard	La Charité	Gazette des Hôpitaux	do.	Traumatic aneurism of the radial from wound.
4	Hewett	do.	30	do.	St. George's Hospital	Proc. Med-Chir. Society	do.	Traumatic aneurism of the ulnar, the result of a wound.

Case of Aneurism of Anterior Tibial Artery successfully treated by Compression.

No.	Surgeon.	Sex.	Age.	Occupation.	Where treated.	Where reported.	Result.	Observations.
1	Alexander.	Male	30	Ganckkeeper.	St. George's Hospital	Edin. Monthly Journal	Cured	Traumatic aneurism from gunshot injury.

It will be seen that the foregoing table includes fifty-four cases of popliteal and femoral aneurism—viz., forty of popliteal, and fourteen of femoral; three cases of brachial aneurism; four of radial or ulnar aneurism; and one of aneurism of the anterior tibial artery. I have not admitted any case into this list where the patient was not *cured*, and did not live for some years afterwards. I am aware that it does not include every case which has occurred during the period in question, as some have not been published, and perhaps a few others have escaped my notice, or have appeared in journals to which I had not access.

25. *Deligation of the External Iliac Artery*.—JOHN HARRIS, Esq., senior surgeon to the Devon and Exeter Hospital, on the 25th of October, 1851, applied a ligature to the external artery, in a man 29 years of age, for an aneurism of the femoral artery, on the left side, immediately below Poupart's ligament. The patient was in robust health; the tumor had existed only a month, and was about the size of a turkey's egg. The ligature came away on the 19th day, and the patient was discharged cured on the 11th March.

This is the sixth time that the operation has been performed in the Devon and Exeter Hospital within the last twenty-five years, and five out of the six successfully. In the unsuccessful case, the patient died from consequent peritoneal inflammation.

26. *Operations for Retention of Urine, occasioned by inveterate Stricture*.—[JOHN SIMON, Esq., in a clinical lecture, delivered at St. Thomas's Hospital, made some remarks on this subject, and gave an account of a method of operating which is worthy of consideration.]

When your patient, by reason of a stricture in the urethra, is unable to empty his bladder along the natural channel, and when you are foiled in your utmost endeavours to effect this for him by catheterism, or by the employment of other appropriate means, in that emergency, when it arises, how are you to give an artificial vent to the urine?

I purpose illustrating to you, in the present lecture, what I consider the right answer to this question. I shall explain to you the general principles which determine the surgeon to make artificial openings into the urinary passages; and I shall give you the *rationale* of a line of treatment, which you have seen me adopt successfully in various cases, as a substitute for the operations more commonly practised.

First, however, let me impress on you that, in the hands of a skilful surgeon, the emergency to which I advert is not a frequent one, and that you must not too readily admit its existence as your ground for the operations in question. I cannot now go into the whole subject of inveterate stricture; but, if you have given attention to the routine of hospital practice during a few months, you must know that, in an immense majority of instances, even of very old, very tight, very obstinate stricture (provided other conditions are absent to which I shall presently refer), we succeed in giving relief, without recurring to the last expedient of knives or trocars.

The necessity for making an artificial opening into the urinary passages may be established, for such cases as we are considering, under any one of these three conditions, viz.:—

(1) All means for procuring the natural discharge of urine may absolutely fail; (2) urgent constitutional distress may render it dangerous to temporize, as in attempting the gradual dilatation of the stricture; (3) the urethra may have ulcerated at the seat of stricture, and may be allowing extravasation of urine to occur, with its attendant wide-spread mischief.

I. As regards the first condition, I believe it to be of the very utmost rarity. Taken simply and singly, it has never yet driven me to the necessity of operating. The local state of stricture which determines complete retention of urine is a compound one. Though the canal be permanently so small as to make urination very laborious, perhaps allowing the patient to effect it only *guttatim*; yet that which brings him to a dead lock is a temporary work. The mucous membrane is swollen by some additional congestion of blood, or the canal is

obliterated by muscular spasm. And over this temporary aggravation we have great control. A full dose of opium, aided, perhaps, by leeches to the perineum and by the hot bath, or in some cases preceded by the action of a brisk purgative, will generally give relief; and thus, even if we cannot extemporaneously get a catheter into the bladder, we can re-establish the patient in his previous state of dribbling urination; we can insure that his bladder shall partially evacuate its contents; and we can gain time for that gradual dilatation of the stricture which will bring more complete and permanent advantage. With these resources in your hands, and with an expert, but, above all, a gentle and patient management of the catheter, I can promise that you will scarcely ever find yourselves defeated in uncomplicated cases of retention of urine from stricture. Should that rare contingency arise; should your milder measures utterly fail; should the urethra remain absolutely impervious, letting in no catheter, letting out no urine; then, undoubtedly, as I have stated, this condition would establish a necessity—a legitimate, an imperative, and urgent necessity—for your making an artificial vent for the distended bladder.

2. The second specified condition for the performance of such an operation is a more frequent motive than the first. The stricture, though very close, may not be quite impervious; it may let enough urine pass to keep the bladder free from fatal distension; it may even (though this would be unusual) permit your smallest catheter to traverse it; yet, with all this, your patient may be dying. He is an old man, perhaps, with a shattered constitution; he has been plagued with his stricture for years; it has been neglected or aggravated; his urine is fetid and full of pus; he has had constantly recurring rigors; his loins are painful and tender; every attempt at dilatation of his urethra gives severe suffering; his shiverings and sweatings have left him each day feebler; his weak pulse beats above 100 in the minute; his hands are tremulous; his tongue is getting dry; he is threatening to become typhoid, breaking down under the prolonged irritation of his local disease. You may entertain no doubt that, with time, you could dilate his stricture; but here exactly it is, that time is an ally you cannot reckon on. A fortnight or three weeks would be requisite for your endeavour to have any success; and far within that period you would have nothing but the dead body to catheterize. Here, obviously, there is urgent need for immediate and complete relief, for relief that shall at once put the man into a tranquil and painless state; and the establishment of an artificial outlet for his urine is the clear indication of treatment.

3. The third condition which I have stated to warrant the necessity of this proceeding, is that under which we most commonly adopt it—where, namely, the urethra has given way behind the seat of stricture, and presents an aperture through which, at every contraction of the bladder, urine is effused amid the adjacent textures, exciting them to inflammation and gangrene. I need hardly tell you, that cases of this description are among the most urgent in surgical practice, and that the utmost promptitude of relief is requisite for the patient's safety. Though the stricture, so far as that goes, may be of a kind likely to yield to gradual dilatation, yet, pending this slow process, what is to become of the urine? Is it to continue its destructive course of effusion amid living textures? Manifestly not; and therefore the local treatment resolves itself under two heads; first, to adopt such a course, relatively to the strictured and perforated canal, as will prevent any further extravasation of urine; secondly, to make such incisions as may be requisite for discharging out of the infiltrated tissues all their fetid accumulation of urine, pus, and sloughs. In seeking to fulfil the former of these indications, we find it necessary (as under the conditions previously considered) to make an artificial passage for the urine: and the operation, as I have said, has its most frequent necessity in the condition here adverted to. Out of six cases, which I shall presently bring before you, in which I was obliged to perform the operation in question, five were cases in which the urethra had given way, and extravasation of urine was in progress.

And now, gentlemen, suppose the necessity to be established for your giving an artificial passage to the urine; suppose one of the three conditions to be present which I have stated to you; that you cannot procure any discharge

whatever by the natural channel; or that your patient is suffering urgent constitutional distress from the insufficiency of such relief as you have procured him; or that the perineum and genitals are beginning to swell with extravasation of urine; now, what course have you to adopt?

The operation which for a great many years has been prevalent here (and, indeed, in most London schools of surgery) has been the following: (1) A catheter or sound has been passed up to the seat of stricture, at or near the bulb of the urethra; (2) a long cut has then been made in the raphe of the perineum, reaching down to the urethra, and opening it behind the seat of stricture; (3) the urethral incision has been prolonged forwards, towards the point of the catheter or sound, so as to split open the contracted portion of the canal; and finally (4) all impediments being overcome, a large catheter has been conducted along the urethra into the bladder, and there secured by appropriate bandages.

You will find this operation fully described in Mr. South's translation of Chelius, and spoken of as the practice of the borough hospitals for the past thirty or forty years. And, if you wish to see the operation in its most favourable aspect, you cannot do better than observe it in Mr. South's hands, who has had great experience in the proceeding, and who executes it with all the care and patience which are indispensable for its success.

Professor Syme, of Edinburgh, who is a great authority in such matters, speaks of this operation as "protracted, uncertain, dangerous, and unsatisfactory." Looking to its average performance, I must say my experience would justify this censure. It is *protracted*, for the patient undergoes severe manipulation during a period of which the mean would be twenty to thirty minutes. It is *uncertain*, for the division of a stricture or strictures to which one is so imperfectly guided cannot be accomplished with facility; nor can one feel sure, under the most favourable circumstances, that one's scalpel has hit the exact line of a canal contracted (perhaps for an inch of its length) to such narrow dimensions as scarcely, if at all, to admit the smallest catheter.* It is *dangerous*, because (in addition to the sources of risk just adverted to) large hemorrhage not unfrequently contributes to exhaust the patient; and further, because in many cases (as where the urethra is contracted throughout its whole spongy portion) a catheter cannot be maintained in the passage, without prolonging that state of pain and irritation which already have set life in jeopardy. And *unsatisfactory* it must be on all these grounds. For what can be more so than to conclude a severe and dangerous operation with uncertainty as to whether one has accomplished that very object for which the severity and the danger were encountered?

These objections apply to the proceeding as practised by the best (I mean the most careful) operators. In other than good hands, it is a very horrid affair: metallic instruments are thrust in all directions; they leave the canal at one place, and re-enter it by perforation at another; or they pass up to the hilt—one shudders to think where!—and draw no water; the rectum, the prostate, even the bladder, undergo injury in these violent efforts, and the patient is eventually sent to bed, it may be with his bladder unemptied, having his chance of cure sensibly diminished by the infliction of so much unnecessary mischief.

We cannot be surprised that many surgeons have taken refuge from the precarious chances of this operation, in the comparatively simple and secure process of tapping the bladder by the rectum or above the pubes. I shall presently describe to you the operation which, generally speaking, I consider a far preferable alternative even to these. But, before examining their comparative merits, I have still something more to say in respect of the last.

Within these few years, Professor Syme has introduced a method of dealing with obstinate strictures, by dividing them on a director previously passed through the constriction; and you may ask whether the adoption of this manoeuvre would be applicable to the cases we are considering, so as to remove

* "Even under the most favourable circumstances, it cannot be otherwise than doubtful whether the stricture be properly divided; that is, whether the incision has passed through the narrow canal in the centre, or through the solid substance on one side."—*Brodie on Diseases of Urinary Organs*, p. 65.

the objections I have expressed to the operation of dividing the stricture without any such assistance? I think not. The cases heretofore treated by Mr. Syme's operation have not been cases where the primary consideration is to give immediate relief to a distended bladder, or to provide against advancing extravasation of urine; and in cases such as these there are generally circumstances which would render the director inadmissible. If the urethra is impervious to a small catheter, it is not likely to yield to this other instrument; if the canal has ulcerated, so as to communicate with infiltrated and sloughing tissues, or is riddled with false passages, the director would be not unlikely to prove a treacherous guide. Here and there one might find a case in which (supposing division of the stricture to be our desideratum) Mr. Syme's principle would admit of application; but, speaking generally, I may repeat that his proceeding relates to quite a different class of cases.

But, gentlemen, if that "protracted, uncertain, dangerous, and unsatisfactory" operation, which I have described, could admit of serviceable modification by Mr. Syme's proceedings, there is yet another reason, I think, which would induce us to reject it.

The operation held its ground because of its alleged completeness. The notion of dividing (and therein *curing*) the stricture, at the same moment as one gave relief to the distended bladder, was indeed charming. But, of late years, surgeons have discovered, that this seductive completeness had in it a practical fallacy. The division of the stricture was the sheerest superfluity. Let the bladder be relieved any how—by the perineum, by the rectum, by the pubes; merely let the stricture for awhile be undisturbed by the constant irritation of urine urged against it from behind, and there speedily occurs a spontaneous perviability of the canal. The stricture wants no cutting. It loosens itself.

So remarkably does this effect belong to the withdrawal of pressure from the stricture, that it arises, not only when the surgeon has made an artificial outlet for the water, but also under far less favourable circumstances; namely, where the urethra has given way behind the stricture, and where the bladder expends its chief expulsive force in driving the urine into surrounding textures. "The first effect of this mischief," says Sir Benjamin Brodie, "is to relieve the patient's sufferings; there is no more straining, and the spasm of the stricture, no longer excited by the pressure behind, becomes relaxed, so as to allow some of the urine to flow by the natural channel." Further, in the very numerous cases where the endeavour to divide a stricture has been defeated by the difficulties I have adverted to, and where, contrary to the performer's intention, the operation has not advanced further than the stage of cutting into the bladder or urethra somewhere behind the obstruction, the same loosening of the stricture has been observed to ensue, as though it had actually been divided.*

Surely, it cannot be desirable to incur difficulties and dangers in attempting to divide a stricture, when the same advantages spontaneously arise without that division being accomplished.

These considerations have led me to the modified perineal operation, which you have seen me perform in various instances, and which consists simply in this: I open the urethra by puncture, or by very small incision, immediately in front of the prostate gland. I run a short elastic catheter along this wound to the bladder. I leave the stricture quite untouched for ten days, more or less, during which the urine flows entirely by the perineal catheter. At the end of this time, I find the stricture sufficiently relaxed for me to begin its dilatation with a middle-sized instrument; and I thus obtain all the advantages assigned to the severer and more difficult measure, while adopting an operation of extreme slightness and security.

I have already intimated to you that many surgeons, feeling the risks and difficulties which are inseparable from the ordinary perineal operation, have

* "In cases of stricture, if the stricture be so far forward that it be not involved in the wound in the perineum, or by sloughing, if urine be extravasated, it generally relaxes so much that it can be cured by the ordinary treatment with bougies or sounds, during the reparation of the wound in the perineum."—*Mr. South, in note to Translation of Chelius*, vol. ii. p. 436.

chosen rather to tap the bladder, in such cases as we are considering, either above the pubes or by the rectum. Obviously, on the principles which I have stated to you, either of these proceedings might give very satisfactory results. The bladder would be effectually emptied, and the stricture relieved from irritation; supposing the urethra to have given way, diffusion of urine would be prevented; and neither of these operations can be considered very difficult or very dangerous.

If, therefore, my choice lay between the ordinary perineal operation and these other expedients, I should not hesitate to prefer one of the latter. But the modified perineal operation which I advocate is still simpler and safer.

I admit, for instance, that tapping the bladder through the rectum is not a very difficult or very dangerous operation. A man of ordinary skill can hardly bungle it. Yet it is not quite so simple a matter as driving your trocar into a hydrocele. It requires some practice and dexterity. I have known an able surgeon, in attempting it, make two successive stabs; the first *went by the side* of the bladder, the second *transfixed* it. And I should doubt whether, even under the most skilful management, the peritoneum would always be so safe from injury as the advocates of the operation believe.

But assuming, for argument's sake, that the manipulation shall never miscarry by any such slips as these, I can still scarcely approve of the operation. To bore a hole through the rectum would seem, at first blush, a roundabout way of emptying the bladder. It strikes me as an awkward and unworkmanlike proceeding, to involve a second viscus unnecessarily in the attempt to relieve a first. One would wish to minimize the injury of one's operation; and, if one can relieve the bladder equally well without wounding the rectum—if one can accomplish one's purpose by a direct cut through the common integuments, or little more, surely one would argue *primâ facie* that the rectum should be let alone. For the wounding of the bowel cannot be a matter of indifference. The track of the trocar between the seminal vesicles must be the seat of irritation—not often, perhaps, to a serious extent, but certainly sometimes. Occasionally, no doubt, an abscess forms there, aided by a little infiltration of urine; and from such a beginning as this very multiplied mischief might arise and continue. I understand there died in this hospital, not long ago, a patient who, at some previous time, had undergone elsewhere the operation in question; and in whom the irritation occasioned by it had never subsided. There had apparently been formed, in the manner just suggested, an abscess between the two openings; urine continued to flow through the rectum, with extreme discomfort and tenesmus; and the man's health was undermined by this continued suffering and irritation. I repeat, therefore, that the rectal operation, as compared with the ordinary perineal section, presents unquestionable advantages; but, as compared with the modified perineal operation, it must be considered, I think, to have the disadvantage of inflicting unnecessary injury, and incurring unnecessary risks.

The supra-pubic tapping of the bladder is even easier of performance than the rectal operation, and has some other arguments in its favour. Indeed, there are cases, though not such as we are now considering, in which the bladder cannot be relieved by any other proceeding. Such are the cases in which invincible retention of urine is occasioned by tumours of the prostate; for here, obviously, no perineal incision would carry us beyond the obstruction, and the morbid growth would render tapping *per rectum* difficult or impossible.

But, as respects cases in which our necessity to operate depends on stricture and its consequences, I cannot think the supra-pubic puncture a desirable proceeding. The distance to which the contracted bladder retreats, so soon as its contents are discharged, is a matter of serious inconvenience. The areolar tissue between the bladder and the abdominal wall may easily get irritated by soakage of urine. The opposed edges of the recti would, in any such case, be an obstacle to the escape of the unhealthy accumulation. Further, notwithstanding the facility of the puncture, mischances have happened in its performance; and, both in the operation and afterwards, the posterior wall of the bladder has suffered from the trocar or the canula.

Reviewing the objections I have briefly stated, I cannot but give a decided

preference to the modified perineal operation, in all cases which admit its execution. The point of the urethra selected for the puncture is definite in its position. It is readily reached from the surface of the perineum. No important parts intervene. The subsequent escape of urine is direct. The position of the catheter causes little inconvenience. The perineal incision necessary for reaching the urethra is in nearly all cases required by accumulations of pus and extravasated urine. In such cases nothing is wanting to relieve the bladder but to deepen this incision into the urethra itself—a proceeding surely both milder and more obvious than if, after cutting deeply into the perineum for pus and extravasated urine, one were to start *de novo* with a trocar, to tap the bladder by the rectum or above the pubes.

[Mr. Simon then gives the history of six cases in which he performed the above operation, and concludes his lecture with the following remarks on the mechanism of the operation.]

I need scarcely add to what I have already said, beyond recommending you to practice on the dead body, at every convenient opportunity, the art of reaching the urethra at its membranous portion without the guidance of a staff. On your power of doing this depends your right to attempt the operation I have described to you. But what can be easier? The canal which you wish to penetrate is not a small one; often, indeed, it is considerably dilated in consequence of the diseased condition which obliges you to operate; its position is invariable, and in every point of its course can be readily explored from the surface. The bulb is subcutaneous. The prostate you feel within the anus. The length of canal between these two points is not an inch; its course straight in the median plane. Any difficulty which might be occasioned by the bulging of the perineum with pus or extravasated urine ceases, of course, with your first incision, which (in such cases made with proper freedom) gives immediate vent to the confined fluid, and enables you to proceed with facility. Often in thin subjects, and where the urethra has not given way, the distension of this canal, as the patient strains to make water, will render it so evident, that your operation may resolve itself into a mere puncture with a lancet. In the less easy cases, where your subject is fat, or the perineum deep and infiltrated, there is really nothing to deserve the name of difficulty. You make a sufficient cut in the raphe, terminating a little in front of the anus, and sinking as deep as may be requisite into the cellular tissue. You may then, in the following way, arrive at the point of the urethra which you wish to penetrate. Pass your right forefinger into the anus; ascertain, through the wall of the bowel, the position of the prostate; bring your finger forward till it discovers the anterior extremity or apex of the gland; let it just pass this spot, and rest (nail upwards) pressing with its point immediately in front of the gland. Of course, if the parts were transparent, you would now see your finger indenting the membranous portion of the urethra at that hindmost point of its course where you purpose to puncture it. Now pass your left forefinger (nail upwards) into the wound; advance it till (with the guidance of the finger in the rectum) it falls against the apex of the prostate; there you so arrange it that the middle phalanx presses back the rectum; the last phalanx lies along the prostate, with the tip of its nail indicating the spot at which the urethra emerges. Finally, withdrawing your right forefinger from the anus, and resuming the bistoury, you run this along the left forefinger, till you penetrate the canal on which it rests, and immediately follow it by the short elastic catheter which you intend leaving in the bladder.

The cut is made into the urethra, you observe, just at the confines of its prostatic and membranous portions: a spot which is posterior to the seat of stricture, and is easy to hit, from the definiteness and invariability of its position.

With a little practice on the dead subject, you will readily acquire the knack of doing this operation in the natural condition of the parts with a single puncture; and you will find that disease alters those natural relations far less than is commonly stated. But in the most difficult cases which can come before you, if you follow the rule I have given you, and carefully determine through the rectum the exact point at which the urethra emerges, you will fail to find

any embarrassment, and will complete the operation in much less time than I have taken to describe it.

The after-treatment of these cases, for some days succeeding the operation, is not unimportant. Liberal allowance of stimulants is often required, sometimes from the very first. This purpose I generally effect by wine, or (if the stomach be irritable) by brandy with soda water. Actual drugs I rarely use, unless it be to procure action from the bowels, which, if their secretions be much disordered, I do as early as possible, with either colocynth or compound rhubarb pill, in combination with blue pill. Opium I do not find admissible.

As regards the history of the operation which I have recommended to you, I cannot give you very full details. If you refer to Sir Astley Cooper's *Lectures on Surgery*,* you will find that, at the time of their delivery, he recommended, in cases of simple stricture, that a puncture should be made into the urethra, where distended by urine, immediately behind the seat of stricture; and Sir Benjamin Brodie (who rather leans to the rectal operation) speaks† of the puncture of the urethra as "a sufficiently simple and unobjectionable proceeding." As far as I can judge from Sir Astley Cooper's scanty description, it was only in cases of stricture far forward in the urethra that he adopted this course, and "passed a lancet" into some part of the canal anterior to the bulb. At least, if he ever practised any such operation as I advise for strictures situated further back in the urethra, so that his puncture would have been made in the vicinity of the prostate, I suspect that he soon afterwards abandoned it for the supposed advantages of dividing the stricture. The latter operation seems to have taken its rise about forty years ago. It was first practised, I believe, by the late Mr. Grainger, of Birmingham (father of my distinguished colleague, our teacher of physiology), and is very well described in a volume of "Medical and Surgical Remarks," published by that gentleman in 1815. It soon became the general operation for cases of stricture, and has been extensively practised, in the borough hospitals and elsewhere, down to the present time. When Mr. Grainger found himself unable to accomplish it, he used to make a partial division of the prostate, as in the lateral operation of lithotomy, and thus convey an elastic catheter to the bladder.

Sir Benjamin Brodie recommends, in cases where the urethra has given way behind a stricture, and where a bougie can be introduced, that this should be used as a director for the introduction of a perineal catheter, and that the latter should be left in the wound for one or two days.

I am not aware of any surgeon having habitually practised the operation in the form I have described; and, from such observations as I have made on the subject, it seems to me well worthy of more general adoption. Practised in the manner I advise, it may, I think, entirely supersede the operations for tapping the bladder, except in those very rare cases of prostatic tumour where the supra-pubic puncture is inevitable. It likewise entirely annuls the supposed necessity, while it avoids the difficulties and dangers, of dividing the stricture *in perineo* for the relief of retention of urine. And its advantages, meanwhile, are purchased by so trifling an endurance of pain, inconvenience, or injury, that I could not cite to you, from the whole practice of surgery, any parallel instance of disproportion between means and results—any instance where, from an extremity of disease, suffering, and danger, the patient is suddenly removed, by surgical appliances so simple and so secure, to a condition of comparative enjoyment and safety.

The only argument likely to be urged against the proceeding in question is one which I may best anticipate and answer in Sir Astley Cooper's words: "This operation has been objected to (he says) on the supposition that it requires great anatomical knowledge. To this objection, I will say, that he who is adverse to an operation because it requires anatomical knowledge, should immediately give up his profession; for if surgery be not founded upon an accurate knowledge of anatomy, it will be better for mankind that there should be no surgery, as disease will proceed better with the natural means of relief than with the aid of those surgeons who are not anatomists.—*Med. Times and Gaz.*, April 10 and 17, 1852.

* Vol. ii. pp. 315—317.

† Diseases of Urinary Organs, p. 42.

27. *On the Use of Chloroform in the Treatment of Stricture of the Urethra with Retention of Urine.*—R. J. MACKENZIE, Esq., in a clinical lecture delivered in the Royal Infirmary, made the following interesting remarks on this subject:—

In the treatment of ordinary stricture of the urethra, the use of chloroform is not called for. On the contrary, its employment, where no unusual irritability of the urethra exists, must evidently be attended with disadvantage, as the feelings of the patient form, to a certain extent, a guide to the surgeon in passing the instrument through the constricted part of the canal.

It is in the irritable form of stricture, accompanied with spasmodic contraction of the muscular fibres surrounding the urethra, that advantage is occasionally derived from the use of chloroform. Cases of this kind occur, where, every now and then, during the treatment by dilatation, the progress of cure is checked for a time—a bougie of small size is tightly grasped in the stricture, which a day or two previously easily admitted a larger instrument. This difficulty appears to be caused by spasm of the muscular fibres surrounding the canal; and it is in such cases that the use of chloroform decidedly facilitates the introduction of instruments.

But it is when retention of urine occurs in cases of this kind, that the advantage of chloroform is more prominently marked, and of which, I think, the simple details of the following case give undeniable proof.

James Pentland, æt. 23, admitted into the hospital, October 19, 1851, on account of stricture, with retention of urine. He stated that for the last four years he had served in an infantry regiment, during the greater part of which time he had suffered from stricture of the urethra, on account of which he had been discharged, as unfit for military duty, a few months previously to the date of his admission into the hospital. He had repeatedly, whilst in the army, suffered from retention of urine, which had been relieved occasionally with great difficulty, and with very small-sized catheters, at other times with instruments of larger size.

During the last month, his difficulty in making water has increased; and on the day before his admission, he again suffered from retention, and the surgeon under whose care he had latterly been, and who had, on various occasions, passed instruments into his bladder, failed in introducing a catheter. The patient was then sent to the hospital, where, after a good deal of difficulty, I succeeded in passing a small catheter (No. 2) into the bladder, and removed a large quantity of urine. The catheter was tightly grasped, and an induration was felt by the finger at the seat of stricture—the bulb. The catheter was retained in the bladder for two days, when it was withdrawn, and he was able to pass his water easily in a small stream.

On the 24th, at the hour of visit, I found him again suffering from retention. A large quantity of urine had accumulated, the bladder forming a prominent tumour, which reached nearly as high as the umbilicus. On attempting to introduce a catheter, I found I was unable to pass the smallest-sized instrument through the stricture. No. 1 was passed within the constricted part of the canal so far that it could not be withdrawn without using a considerable degree of force; but, after repeated trials, I was foiled in reaching the bladder.

Under these circumstances, I was about to request the assistance of Mr. Syme, who was in the hospital at the time, when it occurred to me that the case was a good one to test the existence of muscular spasm by the use of chloroform. After inhaling the vapour for a few seconds, the patient became much excited, and struggled a good deal: but no sooner had the stage of excitement passed off, and the relaxed state of the muscles and stertorous breathing evinced the full action of the anæsthetic, than *the urine was expelled in a forcible and continuous stream* by the side of the small catheter, the point of which I had retained within the constricted part of the canal. I immediately withdrew the catheter, which now lay loosely within the canal, and at once passed No. 2 into the bladder with perfect ease.

After emptying the bladder, and before withdrawing the catheter, I requested one or two of the gentlemen who were present, and who had felt the tightness with which the smallest instrument had been grasped, to satisfy themselves

that the larger catheter now lay loosely in the canal. I believe, indeed, that Nos. 4 or 5 might now have been passed as easily as No. 2.

No further difficulty occurred in the treatment of the case. The contraction of the canal was overcome by gradual dilatation, and the employment of chloroform was not again required. On the 27th, No. 2 only could be passed. On the 29th, Nos. 2 and 3. On the 1st of December, the patient was dismissed from the hospital, No. 16 having been passed two or three times before his dismissal. He returned to the hospital two or three times afterwards, when my house-surgeon, Mr. Moir, found no difficulty in passing the largest-sized bougie. His urine was passed in a full stream, and his former symptoms were entirely relieved.

In recording this case, it is not my wish to advocate the employment of chloroform as a general rule, even in those cases of stricture where considerable irritability of the urethra exists; but to call attention to the distinct proof of the constriction in this case being much increased by muscular spasm, and of this being at once relieved by the action of chloroform, as well as to the fact that the bladder retained its expulsive power, whilst the retentive muscular fibres were relaxed.

The involuntary evacuation of the bladder is a frequent effect of the inhalation of chloroform, which is not difficult of explanation. The tendency of the bladder to contract, when moderately distended with urine, is resisted, whilst the individual retains his senses, by an effort of the will, by the contraction of voluntary muscular fibres. Under the full influence of chloroform, the voluntary muscles are paralyzed, but the involuntary muscles retain (unless the inhalation is carried to a poisonous extent) their contractile power. The muscular movements of respiration and circulation continue. The contractions of the uterus in parturition are only partially, if at all, impaired; the bladder in the same way retains its expulsive power. In the operation of lithotomy, we see the urine expelled through the opening in the neck of the bladder with the same force when the patient is in a state of complete anæsthesia, as when chloroform has not been inhaled. The organ, though deprived of sensation by the action of the chloroform, retains its sensibility to its natural stimulus, and retains, at the same time, its contractile power. The muscular fibres, which, in a state of health, resist, through an effort of the will, the expulsion of the urine, are, in irritable stricture, spasmodically contracted. The spasm is relieved by the action of the chloroform, and the resistance to the flow of urine being thus removed, the bladder expels its contents.

Professor Starrox has kindly furnished me with the notes of a similar case, which occurred in the practice of Mr. Creeke, of Leven, whose account of the case is as follows:—

“A young sailor, robust and active, aged 25, applied to me, September 14, 1851, not having voided urine for twenty hours. He has had a stricture for some years, and had a very small catheter introduced in Bombay about eighteen months ago. He had not much difficulty in making water during his voyage from India, and has lived rather freely since his return home.

“Finding all attempts at introducing a catheter useless, I proposed to administer chloroform, but to this he demurred so strongly as to induce me to consult my friend Dr. George Forbes, of Kennoway, who also attempted the introduction of the catheter without success. The administration of chloroform was again proposed, and, as he was suffering considerably from distension of the bladder, he consented. The chloroform vapour was then inhaled for about a minute, when he exclaimed, ‘I’m all right now!’ In fact, he was passing urine quite freely (allowing for the organic lesion before spoken of). I kept up the action of the chloroform slightly, and he emptied the bladder to his astonishment and great relief.”

The account of these cases proves, I think, the value of chloroform as an auxiliary to the introduction of the catheter, or even as a means itself of relieving the distended bladder. It acts in the same manner as the warm bath, but much more speedily and effectually. Without its employment, I think it is not improbable that in both the above cases it would have been necessary to have opened the urethra from the perineum, or to have punctured the bladder.

—*Monthly Journ. of Med. Science*, March, 1852.

28. *New Mode of Operating for Ovarian Dropsy.*—Dr. I. B. BROWN read before the Medical Society of London, May 15, 1852, a paper on this subject. His operation consists in excising a portion of the cyst, returning the remaining portion into the peritoneal cavity, and closing the wound by sutures, thus allowing any fresh fluid secreted by the remaining portion of the cyst to escape into the cavity of the abdomen, there to be taken up by absorption, and discharged by the kidneys. Mr. Brown said this method of treatment was suggested to his mind by reflecting upon the numerous cases on record, in which a spontaneous cure has occurred by an accidental rupture of the cyst, followed by a copious discharge of urine. This mode was not considered applicable to every case, nor was it the purpose of the author to lay down any absolute rules for its use, but simply to relate such facts as had come under his observation.

CASE 1.—This case had been alluded to on a former occasion, and Mr. Brown now read the notes of the case as they were taken by Mr. Bullock, at St. Mary's Hospital, where the operation was performed. The woman, aged forty-seven, was subject to prolapsus uteri, which Mr. Brown considered as presenting a sufficient objection to treating the case by pressure. The swelling first appeared rather on the left side, about nineteen years ago, but had increased rapidly during the last six months. The following was her condition on admission to St. Mary's Hospital, Feb. 13, 1852: Abdomen considerably enlarged, with shooting pains extending to the shoulders. Complete procidentia uteri, returned with difficulty. Percussion dull in front, resonant at the sides, less so on the left than the right; fluctuation very distinct, the integuments moving freely over the tumour.—Feb. 14: Ordinary diet; porter, one pint; blue-pill, three grains; compound aloetic pill, four grains, every night, with saline diuretics.—March 6: General health good; some fluid drawn from the cyst with a small trocar was quite clear, with only a trace of albumen and some chlorides.—10th: She was placed under the influence of chloroform, and an incision was made through the integuments, down to the linea alba, from an inch and a half below the umbilicus, extending four inches. The linea alba was then divided, afterwards the transversalis fascia, and finally the peritoneum; the cyst was then presented to view, and found to be free from adhesions. It was seized by a pair of forceps, a large trocar was introduced, drawing off about sixteen pints of fluid, leaving some fluid in the cyst, and then a piece of the cyst which appeared comparatively free from bloodvessels was excised. The external wound was closed by interrupted sutures, the ligatures including all the abdominal parietes except the peritoneum. She was ordered two grains of opium immediately, and one grain every three hours. A pad of wet lint was placed over the wound, and a broad bandage round the abdomen. Severe peritonitis ensued for the first five or six days, which was subdued completely by large and repeated bleedings from the arm, with calomel and opium. In eight days the abdominal tenderness had subsided, the abdomen became flaccid, and the urine passed exceeded in quantity the fluid swallowed.—By the 21st (eleven days after the operation), the remains of the cyst could be felt on the right side of the cicatrix, as a solid substance of an irregular form. On the 3d of April, no increase of the abdomen could be discovered, and on the 6th she was discharged. Mr. Brown said he expected that the kidneys would continue to secrete more fluid than was drunk for some time, and that the cyst would ultimately become of an indurated, perhaps calcareous character, possessing less vitality, and incapable of secreting fluid. He should feel himself bound to report to the Society any return of the disease, although he did not anticipate a relapse.

CASE 2.—In this case, which had been treated nine years ago by tapping, pressure, mercurials, and diuretics, so far successfully that no return of fluid took place for seven years, the abdomen had been gradually enlarging for the last two years, and the patient was anxious for a radical cure, and sanguine as to the result of the operation of excision of a portion of the cyst. She was previously prepared for the operation by a farinaceous and milk diet, avoiding stimulants, and keeping the bowels well open daily, under which treatment the size of the abdomen was materially reduced. The operation was performed on the 29th of March, 1852, in a manner similar to that related in Case 1. Nine pints of clear fluid were withdrawn, and a portion of the cyst excised. But it un-

fortunately happened that the peritoneal coat of the cyst was very vascular, and hemorrhage ensued, which was not to be subdued by torsion of the vessels. As there were no adhesions, it was determined to remove the whole cyst. A double ligature having been tightly applied over the pedicle, which was attached to the left ovary, about an inch and a half broad, and containing one large bloodvessel, the pedicle was divided, the cyst removed, sutures applied, and over them a many-tailed bandage. The case did very well, no signs of inflammation occurred, the ligature came away in four weeks, and on the day following the patient was in her drawing-room convalescent. This case was related, as illustrating an important difficulty which might occur, rendering the removal of the whole cyst a safer practice than tying several bleeding vessels, and leaving the ligatures within the peritoneum, a source of much danger.

CASE 3.—In this case the operation was performed in a similar manner to that detailed in Case 1. A portion of the cyst was excised, but a second large cyst was found, the fluid of which was evacuated, and the wound closed. An attack of inflammation ensued, which was successfully combated by bleeding, calomel, and opium, and the patient did well. The first cyst became collapsed, and could be easily felt beneath the walls of the abdomen; but the second cyst has frequently filled since; and now, sixteen months after the operation, it fills at a much slower rate, and the patient's health is much improved. Steady and firm pressure has been had recourse to after each tapping, to which Mr. Brown attributes mainly the slower filling of the cyst. This case was related to show another complication which might occur.

Mr. Brown concluded by expressing a hope that this operation may prove to be another successful method of treating this very troublesome disease.—*Lancet*, June 5, 1852.

29. *Gradual Reduction of Herniæ long Irreducible*.—M. MALGAIGNE adduces (*Rev. Méd. Chir.*, t. x. p. 179) two new examples of the efficacy of his plan of reducing old and voluminous herniæ. This consists in subjecting the patient to a very low diet and purgation, applying ice or cold poultices to the tumour, and employing the taxis daily. One of these cases was an enormous inguinal enterocoele, which had remained unreduced for several years, and now equalled in circumference the size of an ordinary hat. Complete reduction was obtained after continuing the above means for seventeen days. The other was an inguinal entero-epiplocele, which had remained unreduced for seven years, and was reduced completely in six days.

30. *Circular Arterial Distribution around the Neck of a Direct Inguinal Hernia*.—Prof. RIZZOLI operated on a patient for a large strangulated direct inguinal hernia on the left side. On passing his finger to the ring, in order to ascertain the locality of the obstruction, the professor found that, on whatever side he explored, it was met by a strong arterial pulsation. He only ventured to make several superficial scarifications, which were not deep enough to implicate the arterial branches, and gradually obtained sufficient dilatability to procure the return of the hernia. The intestine, indeed, from delay, was in a state of gangrene, and the patient died. At the *post-mortem*, the origin of this circular arterial pulsation was found to be as follows: The umbilical artery, rising from the external iliac, and continuing pervious, coursed up on the inner side of the ring, and sent two branches above the upper border of this. From the epigastric artery, which ran on the outer side, also sprang two branches. One of these coursed around the lower and inner side of the ring, so as nearly to surround it, and the other ran along its upper side parallel to the branch coming from the umbilical. An incision anywhere around the tissues of the neck of the sac would have given rise to fatal hemorrhage, so large were these branches. A diagram is furnished with the paper, and the preparation is preserved in the Bologna Anatomical Museum.—*Ibid.*, from *Bull. delle Scienze Mediche*, vol. xix. p. 143.

31. *Tracheotomy in Croup*.—M. TROUSSEAU, in a series of papers in *L'Union Médicale* (1851, No. 100), relates the cases in which he has most recently performed. No. XLVII.—JULY, 1852.

formed tracheotomy for croup. Adverting to his entire experience upon the subject, he states that he has performed this operation altogether 169 times (11 for chronic disease of the larynx, and 158 for croup); and that 43 of these cases, or a little more than a fourth, have recovered. Among his last 18 cases, however, there have been 8 recoveries, or nearly one-half. The results obtained at the *Hôpital des Enfants* have not been less satisfactory of late; for, of 19 cases operated upon, between January and August, 1851, one-half recovered; and M. Guersant has been as successful in his private practice. M. Trousseau believes that one reason of the greater success in later years is, that now the principles of treatment in these cases are better understood; the children are brought to the hospital in a less exhausted state, their powers not having been lowered by the application of leeches and blisters, heretofore so common. Still more importance, however, does he attach to the modifications he has made in the treatment after opening the trachea. Thus, he has discontinued the application of a strong solution of nitrate of silver to the trachea and bronchi, which he used formerly to insist upon. He now, too, employs a double canula, so that the inner one may be taken out and cleaned when necessary, without disturbing the other; and, after the wound is dressed, he covers all the parts over with a cravat, and thus avoids the difficult expectoration and desiccation of the mucus which occurred when they used to be left exposed.—*B. and F. Med.-Chirurg. Rev.*, April, 1852.

32. *Autoplastic Treatment of Ranula*.—M. FORGET relates (*Mémoires de la Société de Chirurgie*, t. ii., Paris, 1851) two cases of ranula, in which he successfully employed a modification of M. Jobert's stomato-plastic procedure. He prefaces the narration by a defence of the opinion generally entertained, that the affection is due to an obstruction or obliteration of the salivary ducts. This view is opposed by those observers who regard ranula as always resulting from an accidental cyst, analogous to the closed cavities in other parts of the body (examples of such sublingual cysts, simulating ranula, are indeed met with); and by Stromeyer and Fleischmann, who regard it as the abnormal increase of a natural bursa. M. Maisonneuve denies that any positive cases of salivary ranula are on record, inasmuch as obliteration or obstruction of Wharton's canal is attended with inflammatory action, which is not found in ranula; but the occurrence of this inflammatory action, in fact, much depends upon whether the obstruction has been suddenly or slowly produced. The great dilatability of Wharton's duct is amply proved by the size and number of the calculi that have been found within it. From M. Forget's view of the nature of the affection, it follows that the various means employed for the relief of the affection should have in view, not the obliteration of a cyst, but the re-establishment of the course of the saliva, by means of a permanent artificial opening; and it is to this end that M. Jobert's operation is directed.

Before adverting to its application in the two cases in question, we may just refer to a very interesting clinical lecture on ranula recently delivered by M. Jobert himself.* In this he observes that great confusion in treating the disease has resulted from confounding, under the term "ranula," all the cystiferous tumours developed at the side of the tongue. To obviate this, he terms ranula arising from obstruction of Wharton's duct "salivary ranula," while he applies the term "mucous ranula" to the tumours which by their external appearance simulate this. When the obstruction of Wharton's duct is complete, *an acute salivary ranula* may form very rapidly and assume a large size, raising the tongue and projecting the submaxillary gland at the side of the neck. The *mucous ranula* (in M. Jobert's opinion the most frequent form) is composed of a cyst developed in Fleischmann's bursa at the root of the tongue, behind the frænum. In the majority of cases, it projects more on one side than the other. Owing to its depth, the tumour is not transparent, unless very recent and tensely distended. When of old formation, and after being subjected to repeated operations or attacks of inflammation, the walls become thickened, so as even to acquire a fibro-cartilaginous consistency. Developing itself at first

* Gazette des Hôpitaux, No. 100, 1851.

in the mouth, it eventually appears in the cervical region, giving rise to a tumour on each side of the median line. Fluctuation may then become as distinct in the neck as in the mouth; and the fluid may be pressed from the one part to the other. A third form may be termed the *follicular ranula*, resulting from an obliteration of one or more of the canals of the mucous follicles. It is superficially situated, and almost always multiple, consisting of several small tumours in immediate proximity; or, if single, it is very irregular. At first it is rounded, but soon becomes pedunculated. It is quite transparent.

In M. Forget's first case, the tumour had previously been once punctured, and once punctured and canterized, two months since; and had now again reached a very inconvenient size at the right side of the mouth.

"I commenced by rendering the entire external surface of the tumour raw by means of a superficial dissection, which implicated the mucous membrane, but not the cyst itself. I extended the dissection as far as possible, and obtained a raw surface at the floor of the mouth, which reached beyond the circumference of the tumour. Next, the cyst was opened by an incision extending through its entire length, parallel to the body of the lower jaw, an abundant albuminous fluid being thus discharged. I then introduced the extremity of my finger into the cavity, and ascertained that it terminated in an *infundibulum*, which was prolonged backwards from the centre of the jaw in the direction of the conduit of the submaxillary gland. Concluding from this that the tumour resulted from a dilatation of the duct, and not from a cyst unconnected with the salivary passages, I continued the operation. The incision of the tumour had furnished two flaps, and I divided each of these in the centre, so as to obtain four of a tolerably regular triangular shape, and which were free and floating in all their extent from base to summit. Having carefully waited until all bleeding had ceased, I next fixed these flaps in proper position, turning each from within outwards, and commencing with the two nearest the tongue. One of these was laid in the sublingual groove, and maintained there by two points of suture, the other being carried beyond the frænum, and secured in the same way. The two anterior flaps were then adapted to the buccal floor. For these last, one point of suture, applied to the summit, sufficed; while, for the other two, in addition to this, a second suture was applied at that edge which corresponded to the raw edge of the mucous membrane, with which they were brought in contact. The immediate result of the operation was to maintain the salivary cavity widely open, so that the end of the little finger easily entered it."—p. 229.

Considerable tumefaction of the flaps and neighbouring mucous membrane ensued, requiring frequent and free application of nitrate of silver during a week. The sutures were removed two days after their application. At the end of five weeks the cure was complete; and M. Forget has since had repeated opportunities of assuring himself that it has continued permanent. The floor of the mouth is as flat on the one side as on the other, and under the tongue an elliptical opening exists, which easily admits a small probe, and from which a fluid, having all the characters of saliva, flows. The inflammatory swelling of the flaps would have obliterated the opening, if the aperture, during the treatment of the case, had not been frequently dilated, and the adhesions broken down by a probe. In the *second* case the swelling had reached the size of an egg. The operation was performed in the same manner; but during the cauterization that was resorted to, to diminish the tumefaction of the flaps, stomatitis was excited, which produced a sublingual tumefaction or commencing ranula on the opposite side; which, however, disappeared with the inflammation that had caused it. For many days the opening manifested a great tendency to close, but was prevented from doing so by the daily introduction of a probe, for two or three weeks.—*Ibid.*

33. *On Opening Buboës by Multiple Punctures.*—M. VIDAL strongly recommends that venereal buboës should not be allowed to open of themselves; for when they are left to nature, the skin becomes detached, and thinned, a great loss of substance ensues, a tedious recovery takes place, and an unsightly deformity is left. Opening by caustic, too, leaves disfiguring scars; and the

same inconvenience results from large incisions, and cutting away, by the bistoury, portions of skin that are too much changed to unite. Still the bistoury is much more easily managed than is the caustic, and M. Vidal much prefers removing by it a portion of half dead, detached skin, or a gland which is an obstacle to reparation, to attacking such parts by caustic. By its aid the cicatrix may be rendered more regular, and cause less deformity. But cases requiring large incisions and excision are rare, especially if the bubo be early treated, and punctures are made as soon as matter is formed.

The bubo should be shaved, and any remains of plaster, &c. removed. A straight, narrow bistoury, or even a lancet, may be employed. If the abscess is recent, and suppuration not extensive, *one* puncture at the fluctuating point may be employed, as a single gland may be then inflamed, and we thus discharge the pus from it. The other glands are only engorged; but if they afterwards suppurate, they must be treated in like manner—so that in this way we may have to open three or four of them in succession, especially in scrofulous subjects. When the abscess is intra-glandular, its deeper seat renders it more difficult of recognition; and it is far better opened by a straight bistoury, which also acts as an exploratory instrument, than by caustic. If the collection be both extensive and superficial, several simultaneous punctures are required. These must not be practised in the thin skin of the fluctuating centre, but at the circumference. The bistoury is passed in obliquely, and guided subcutaneously towards the centre, arriving thus at the pus by a circuitous route. In this way, we divide the skin only where it is adherent, intact, and possessed of its vitality; while if we penetrated the denuded, half dead, and thinned skin of the centre, there would be danger of the apertures enlarging by mortification, and approximating to each other so as to constitute a large breach of surfaces giving admission to the air, and being followed by all the disadvantages of large openings made by the knife or caustic. The bubo must not be pressed for two days after making the punctures, and it will then gradually discharge itself, the space being filled up in proportion as the pus is evacuated, and the walls of the abscess are retracted. The cure is rapid, and after its completion not a trace of the disease is left—the cicatrices which remain not showing more than leech-bites, and like them eventually disappearing. Sometimes the little oblique tracts made by these punctures become obliterated before the pus is completely evacuated; but as it is rare for them all to do so, we may, by gently pressing the tumour once a day, discharge the pus by such of them as remain open—this compression being uncalled for during the first day or two, when the tracts are free, and the pus abundant. Occasionally, all the tracts show a great tendency to close up, and it is preferable to allow them to do so, rather than apply tents to keep them open—making one or two new punctures if required, which is not always the case, as the remaining pus is sometimes reabsorbed.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1852, from *Bulletin de Thérapeutique*, vol. xli.

34. *On Ununited Fracture.* By Prof. SYME.—There are at present under our observation four cases of ununited fracture. Two of these were sent from different parts of the country, as hopeless objects of ordinary treatment—the long period of nearly six months having elapsed since the occurrence of their respective injuries. They were both admitted on the same day, about two months ago; and I then explained that the great source of such conditions being the want of sufficiently complete rest during the period of consolidation, I entertained a sanguine expectation of effecting reparation through the maintenance of absolute immobility of the broken bones. I stated that ununited fracture of the humerus might be regarded as nearly, if not altogether, irremediable by any means hitherto contrived, and that this was fortunately of little consequence, as the muscles of the limb were so equally balanced as to render it useful for most purposes, notwithstanding the defect of rigidity. But in regard to the other bones liable to this derangement, and more especially those of the thigh and leg, which are most frequently the subject of it, I was able to say that, in the course of five-and-twenty years' hospital and private practice, I had always succeeded in restoring firmness, by mere attention to the insurance of stability

in the position of the limb; and I expressed a strong impression, almost amounting to conviction, that various means of remedy, such as setons, subcutaneous division, ivory pegs, etc., owed any share of credit which they had acquired to the care, conjoined with their employment, to keep the bones quiet. The plan I have pursued is founded upon there always being in such cases more or less deformity, from the yielding state of the bone no longer resisting any excess of muscular contraction that may exist on one side of the limb. There is thus established a preternatural convexity, upon which I place a cushion or folded sheet, and upon this—after being secured in its place—a splint of wood, long enough to extend, in the case of the leg, from the knee to the ankle; and in that of the thigh, from the ribs to beyond the foot. Bandages are then applied above and below the cushion, so as to draw the distorted limb towards the splint, and render it not only straighter, but at the same time completely immovable. In many cases of six, eight, or even twelve months' standing, the application of this simple principle has proved completely successful, and, as already stated, I have never found it necessary to employ any other measure. The two patients now under treatment—in one of whom the thigh, and in the other the leg, are concerned—have been much slower than usual in their progress towards recovery, but are now very nearly quite strong, and the limbs, which were much deformed, are perfectly straight. In the third case, at present under our observation, the fracture is seated a little below the neck of the humerus, in a patient who suffers from palsy of the deltoid and other muscles, which has doubtless prevented reunion by not exercising the usual bracing effect upon the broken surfaces, and renders the prospect of recovery even more than usually hopeless. The fourth case has been treated, from its commencement, in the hospital—the patient being a young man, J. C., aged 18, who was admitted on the 10th of January, for compound fracture of the leg. A large portion of the tibia was detached at the time of the injury, and an additional portion subsequently exfoliated. The greatest care was taken to keep the limb quiet in a good position, and everything went on favourably, except that no firmness was regained. The wound has been healed for many weeks, but still the bone remains flexible, as if there were a fibrous substance interposed between its extremities. My explanation of this result is, that the fibula not having sustained a loss of substance commensurate with that of the tibia—or rather any loss of substance at all—has maintained the leg of its original length, and prevented the surfaces of the tibia from approximating to each other within range of the ossific action—just as in the experiments of Sir A. Cooper on dogs and rabbits, where a portion of only one bone of the foreleg was removed—it being always found that when the portion removed exceeded a small limit, the osseous extremities were united by a fibrous medium. According to this view of the case, the most likely mode of affording relief would seem to be cutting out the fibrous substance which has been formed between the ends of the tibia; and, at the same time, in order to promote their requisite approximation, removing a portion of the fibula. Such an experiment appears justifiable under the circumstances, and shall forthwith be put to trial.

By a curious coincidence, you have here another opportunity of seeing the effects of ununited fracture; and having already witnessed it in the arm, leg, and thigh, now see it in the forearm. The patient, a man aged twenty-four, tells us that his arm was broken six weeks ago, and has been treated carelessly. There is now a distinct convexity backwards, with swelling of the limb, and nearly complete loss of power in it. Both bones appear to have been fractured about the middle of their length, and there is here a slight degree of mobility. In these circumstances, I expect you will have a favourable instance of the treatment lately recommended—which consists in fixing a cushion over the convexity, applying over this a splint, and then drawing the ends of the bones towards it, so as gradually to render the limb straight—and constantly maintain the broken part perfectly free from motion.—*Monthly Journ. Med. Science*, June, 1852.

35. *Treatment of Ununited Fracture by the Application of Tincture of Iodine.*—Professor BLASIUS communicated, in 1847, an account of the success he had

obtained in the external application of iodine in pseudarthrosis; and in the present paper he furnishes three other cases. The first was a healthy soldier, aged twenty-eight, who had suffered a simple fracture of the tibia and fibula. The ends of the bones had continued movable for six months, when the following tincture was ordered to be applied externally, night and morning: R.—Iodin. ℥j; iod. pot. ʒss; S. V. R. ʒj. In three weeks the callus was completely consolidated. In the second case, the fragments of a fractured femur (occurring in a soldier, aged twenty-three) remained movable after thirteen weeks; but became quite firm after three weeks' pencilling with the iodine. The third case, occurring in a boy twelve years of age, was equally remarkable.—*Ibid.*, from *Med. Zeitung*, 1851, No. 39.

36. *Dislocation of the Clavicle Backwards*.—Two cases of this comparatively rare accident have been reported recently.

The first is by M. FOURCARD (*Revue Médico-Chirurgicale*, Feb. 1851), which occurred in a woman who, while endeavouring to move a cart by pushing against the wheel, got jammed between the wheel and the wall. She was bled next day, but her symptoms becoming severe she was subsequently minutely examined. It was then found that, in the place of the natural projection of the head of the right clavicle, there was a distinct hollow, and it was evident that a luxation backwards had taken place. The author made many attempts to restore the bone to its place, but without avail, and therefore contented himself with subduing the inflammation by leeches. The patient recovered, and now is only conscious of the accident when she is called upon to make unusually great exertion.

The second is by Mr. SIBLEY (*Med. Times and Gazette*, April 24th, 1852), and in this reduction was easily effected.

The subject of this was a girl aged 10, who was admitted into Middlesex Hospital, March 10, under the care of Mr. De Morgan. It appears that, while playing in the street with some other girls, a carriage driving rapidly by at the time knocked her down; but it is stated by those who saw the accident that the wheels did not pass over her. At the time of admission, was much collapsed; face pale; skin cool, with slight rigors; suffering from great dyspnoea; respiration anxious, 44; pulse 100, feeble. The head is drawn down on the chest, and there is extreme pain when it is raised. On exposing the chest, there is seen considerable tumefaction over the right coracoid process, and about the external half of the right clavicle, with some bruising of the integument. The inner end of the left clavicle may be seen distinctly projecting beneath the skin; but in place of a similar projection on the right side, there is a depression, into which the finger may be thrust, and the clavicular articulation of the sternum felt; this, however, causing great pain and increased dyspnoea. Behind this notch in the sternum the clavicle may be felt, so that the inner end of the bone lies behind the sternum. There is a difference in measurement from the middle line to the acromion of a quarter of an inch in favour of the left side; there is also considerable bruising over the right side of the lower jaw, a slight cut over the right ear, with a more severe one over the left, and a severe laceration of the left little finger.

On placing the knee against her spine, and gently drawing the two shoulders backwards, the bone is easily restored to its proper place, causing obvious relief to the dyspnoea; but immediately on leaving hold of the shoulders, the bone falls back, and the dyspnoea returns. A splint was then placed across the shoulders, with a pad between it and the spine, the shoulders being drawn to the splint by a bandage. By this means, the bone was kept firmly in its place; pillows were so arranged along the child's back that the splint should not feel uncomfortable. On the apparatus being fixed, she could lean her head backwards, and stated that her pain was much relieved.

She continued to wear a splint till a fortnight after the accident; the bone then feeling quite firm in its place, she was allowed to lie in bed without a bandage. Ultimately the articulation became as firm as on the other side.

37. *Foreign Bodies in the Air-Passages*.—The following is a summary of the

principal conclusions with which M. JOBERT terminates a series of papers founded on clinical and experimental observation :—

1. Foreign bodies tend especially to lodge in the right lung, owing to the direction and dimensions of the bronchus of that side. 2. They penetrate when the *chorde vocales* are most widely separated, and a strong column of air rushes into the trachea, as occurs during the rapid inspirations and expirations in the action of laughing. 3. They traverse the superior apertures of the larynx, without raising the epiglottis, which is never closed down upon this, as has been stated. 4. The epiglottis is always raised by virtue of its own elasticity; and its chief office seems to be to direct the passage of certain articles of food, as along a gutter, during deglutition. 5. The bodies traverse the air-passages rapidly, by reason of the laws of gravity, the impulse of the column of air, and their own nature. 6. They are only temporarily arrested at any particular point, and may change their place, until they have excited the inflammatory process, which enables them to hollow out a receptacle, in which they become lodged. 7. A peculiar sound is engendered by their presence; and the bronchial secretion is always increased, and may become sanguinolent. 8. A louder respiratory sound, and a more extended vesicular murmur, are heard on the *opposite* side, than on the side in which the body is placed. 9. Foreign bodies, whose size exceeds four lines in all directions, cannot be expelled by the sole efforts of nature, which are only efficacious in the case of very small ones. 10. In dogs, on the other hand, in whom the glottis is on a level with the upper aperture of the larynx, the expulsion of foreign bodies easily takes place, by reason of the dilatability and dimensions of the aperture. 11. In the dead body, foreign bodies pass the glottis with difficulty, even when aided by the impulse derived from a considerable column of air. 12. In the living body, they have to overcome, not only this passive resistance, but the very active resistance of the constrictor muscles of the glottis. 13. It is only quite exceptionally that the operation of tracheotomy can be dispensed with; and it should be resorted to as early as possible, in order to prevent inflammation, local changes, and rapid or slow asphyxia. 14. It is a delicate operation, which should be performed by the successive division of all the tissues, and not by an incision comprising all or the greater part of the soft parts of the region at once. This is the best means of preventing hemorrhage, the introduction of air into the veins, lesion of the thyroid body, &c. 15. The trachea should be as widely opened as possible, so as to facilitate the escape of the foreign body. 16. We can only be certain that the trachea has been opened, when the air escapes with its characteristic sound. 17. When the foreign body does not issue on the opening being made, we must wait awhile, and excite the sensibility of the trachea by the introduction of a blunt body, so as to cause cough and expulsive efforts. 18. The trachea must be more largely opened, when a foreign body of a nature to swell from moisture has been long retained. 19. Reunion may be obtained by the primary or secondary intention. 20. The union by primary intention may be obtained by simple compression, or by the interrupted suture, this only implicating the *dartroid lamella* that surrounds the trachea. 21. Agglutination may be produced by another procedure, which consists in traversing the walls of the trachea entirely, or in part, leaving the sutures hanging externally, these coming away from the fourth to the thirteenth day. 22. A plastic production serves as the means of union between the lips of the wound. 23. Cicatrization only takes place by means of an intermediate production, and not by the direct fusion of the lips of the trachea. 24. The suture comprising the thickness of the walls of the trachea may excite inflammatory action both within and without the canal, and give rise to organized fistulae and encysted abscesses. 25. The suture which only implicates the covering, or a portion of the thickness of the trachea, only induces a plastic inflammation, and is to be preferred.—*L'Union Médicale*, 1851, No. 68.

38. *Statistics of Operations for Cancer*.—The Professor of Surgery (Mr. PAGET), in his first lecture upon “Malignant Tumours,” at the Royal College of Surgeons, made the startling announcement that persons operated upon for cancer died, upon an average, thirteen months sooner of their disease than

those who were not operated upon. The average was taken from upwards of sixty cases, at the same time omitting all those who died from the immediate effects of the operation.—*Prov. Med. and Surg. Journ.*, May 26, 1852.

MIDWIFERY.

39. *Chlorosis of Pregnancy*.—M. CAZEAUX recently read at the Paris Medical Society a paper, the object of which was to show, "that hydræmia or serous polyæmia is the most frequent cause of the functional disturbances in advanced pregnancy usually attributed to plethora." The analysis of the blood of pregnant women exhibits a diminution of globules and an increase of water, differing indeed only from that of chlorosis by containing an increased quantity of fibrin. The quantity of fibrin is far less than in phlegmon, and the buff it gives rise to has been often observed in the chlorotic. The functional disturbances of pregnancy resemble those of chlorosis, many of these indeed being common to plethora and chlorosis. The effect of treatment confirms this view of their nature; for while here, as in chlorosis, depletion may prove a temporary and fallacious means of relieving serous plethora, it is from the employment of animal food and iron that real benefit is obtained; and this even in cases wherein local bleeding may be deemed advisable. M. Cazeaux does not, however, deny that true sanguineous plethora may be met with occasionally, and especially in the early months.

During the animated discussion which followed, M. DUPARCQUE admitted that pregnancy may occasionally induce a condition analogous to chlorosis; but he referred to the marked power of venesection in arresting threatened abortion from active uterine congestion; and believes that the practice followed by our predecessors of bleeding at the middle of pregnancy, on account of the then active disposition to abortion, may often be advantageously imitated. A similar plethoric determination takes place at the seventh and ninth months; and when the mother does not suffer ill effects from this, it may produce cerebral apoplexy, or that state of general congestion termed asphyxia, in the infant—the plethora killing the child, though it spared the mother, when precautionary venesection had been neglected. Puerperal convulsions might often be prevented, if bleeding were instituted for the plethoric condition in which they so frequently originate. In judging of the presence of plethora, too much weight has been attached to the highly-coloured condition of the skin, especially that of the face and its adjoining mucous membranes, and to the projection of the veins. But it is very common to see persons who are constantly plethoric, and who are liable to phlegmasiæ, congestions, and hemorrhages, exhibiting so colourless a condition of the tissues, that from their mere aspect, we might believe them subjects of chlorosis. Such persons bear losses of blood, which those of a higher colour, and apparently eminently sanguineous temperament, could not endure.

M. JACQUEMIER stated that he had examined the blood of about 200 women, in the eighth and ninth months of pregnancy, most of them being persons from the country. The so-called inflammatory crust was not met with so often as is usually supposed; but occurred much oftener in winter (when many of the women suffered from bronchitis and influenza) than in summer; it being met with at this latter period only once in six or even in nine cases. Most frequently when the buff did exist the clot was pretty large and softish, and the serum was not in excess; the hard, retracted clot, covered with a thick buff, and bathed in a large quantity of serum, as seen in inflammation and chlorosis, being rarely met with. According to his observations, the excess of fibrin, whether absolute, or relative to the diminution of globules, is not considerable enough to habitually give rise to the production of the inflammatory crust. The diminution of globules is infinitely greater in a chlorotic person than in a pregnant woman; and all the analogy that can be traced between the two conditions may be stated in the fact, that a considerable number of women, after the middle period of

pregnancy, exhibit the commencement of anæmia. Clinical observation does not favour the view of the identity of the two conditions. Among many hundreds of women auscultated at the Maternité, during the last two months of pregnancy, M. Jacquemier only met with the carotid *souffle* in two or three.—*Brit. and For. Med.-Chirurg. Rev.*, April, 1852, from *Rev. Médicale*, 1851, vol. i. p. 553; vol. ii. p. 51.

40. *Two Cases of Females who had attained the Age of Forty-eight Years without having Menstruated.*—Dr. HENRY OLDHAM has recorded (*Med. Times and Gazette*, March 27) the two following cases, the only instances he has met with of non-menstruation, the females having passed the age for menstruation.

CASE I.—Maria B. appeared among my out-patients at Guy's, March 1, 1851. Her immediate ailments were unimportant, but I was struck with her informing me that she had never menstruated. She was 48 years of age; a tall, rather masculine woman, with large, full mammae, and a well-expanded pelvis. The upper lip was without hair, but some few hairs had grown upon her chin. She was married at 15 years of age, and her sexual desires had been natural, but she has been sterile. She had suffered occasionally from pelvic and abdominal pains, but there had been no regular menstrual or periodic uterine effort, or any supplementary flux of blood or other discharge from any mucous membrane of the body. Her general health has been good, and she has lived well, in the neighbourhood of London.

The external sexual organs were fully developed, and the pubis was abundantly covered with hair. The vagina was a deep canal, normal in shape and healthy. The uterus was well placed, of natural weight and mobility, and the vaginal cervix well formed, but there was no os uteri; the site of the os could be felt by a slight dimpling, and by the speculum it could be seen: but it was quite impervious, and some small bloodvessels appeared to pass over it.

CASE II.—Mrs. — called at my house in January, 1852, complaining of severe pains in the loins and lower abdomen—which had harassed her for some weeks—general feebleness of health, and dyspepsia. In the course of her history, it appeared that she had never menstruated; and, at her request, I admitted her, under my care, into Guy's Hospital, January 28th, 1852, when the particulars of her history were taken by my clinical clerk, Mr. Massey, from whose report I have extracted the following detail. It may be remarked that her immediate ailments were relieved by a blister to the loins, tonic medicine, regimen, and rest; and that she has just left the hospital quite recovered. Mrs. M. is forty-eight years of age; of a light, delicate frame: dark hair and eyes; a native of Norfolk; but a resident in London for the last twenty years; in poor, and sometimes very reduced circumstances. She has been twice married; both husbands have been healthy men, but she has been sterile, although her sexual feelings have been natural.

Both before and since marriage she has had leucorrhœa; at no time profusely; but, since marriage, it has been muco-purulent; sometimes yielded in small lumps; and has occasionally increased in quantity; but neither from the sexual organs nor any other part of the body has there been anything like a vicarious menstrual discharge.

She has the aspect, form, and sexual development of a healthy person, without the physiological defect which she has suffered, and of which she is painfully conscious. The mammary glands are developed, and are sometimes tender, and yield a lactescent fluid. The pelvis is well expanded; the pubis, labia, and external organs normally developed. The vagina is of normal size and shape, and the uterus well placed, movable, and free from any defect or disorder, either congenital or acquired. She has a light soft hair developed on the lips, but not more than many other women; and her voice is fairly modulated.

These instances of non-menstruation are of rare occurrence. Retarded menstruation, even after the changes of puberty, have been well accomplished—a premature menstrual decline—long intervals of amenorrhœa, and various forms of irregular menstruation, are met with in practice; but that a woman wanting nothing but her menstrual function, and its correlative fecundity, should pass

through life without any notable deviation from health is calculated to excite surprise. The history of these two cases shows a normal state of uterus (the closure of the os in one case being probably a late occurrence), vagina, external sexual organs, mammary glands, sexual instinct, and general physical and intellectual development, and an absence too of any compensating discharge in place of the menstrual flow.

The perfection of the sexual organs allowed, in these cases, an unimpeded sexual intercourse; and yet the prudence or even the propriety of marriage, until a female has menstruated, may well be questioned.

41. *Successful Case of Parturition in a Patient who had previously undergone Ovariectomy by a large Incision.* By JOHN CROUCH, Esq. (Read before the Royal Medical and Chirurgical Society.)—Fanny Gould, the subject of this case, is now a fine healthy young woman, twenty-six years of age. In August, 1849, I extirpated, by a peritoneal section of nine inches, a multilocular ovarian cyst, weighing fourteen pounds, and containing not less than two hundred separate cavities. The operation and its subsequent treatment are described in the 44th volume of the *London Medical Gazette*, and in the *Provincial Medical and Surgical Journal* for 1849. The tumour consisted of an hypertrophy of the left ovary, the cells of which contained an albuminous fluid of various consistencies. The fimbriated extremities of the left Fallopian tube were also much enlarged, and contributed a considerable portion towards the diseased mass. The patient's history from the above period is as follows: About five weeks after the operation she walked the distance of five miles, to inspect the preparation of the tumour which had been extracted from her. During the winter the catamenia appeared at regular intervals, and her general health continued good, with the exception of an occasional pain in the left groin, and a slight difficulty in micturition, sometimes followed and relieved by a muco-purulent discharge in the urine. In April, 1850, she fulfilled an engagement made before the operation, and entered the married state. In January, 1851, the menses ceased, and in a short time subsequently the ordinary symptoms of pregnancy commenced. These were of a mild and healthy character—indeed, she never enjoyed existence more than during her period of gestation. The pain in the left groin opposite the part where the pedicle of the tumour had been tied, the difficult micturition, and the deposit in the urine entirely ceased. On the 9th of October, 1851, two hundred and eighty-two days from the termination of the last menstrual period, she was, after a lingering labour, safely delivered of a male child, weighing seven pounds. The infant was born in a state of asphyxia with the umbilical cord tightly encircling its neck; but soon after the pressure was removed, it showed symptoms of vigorous life. One fact connected with the cicatrix on the abdomen of the mother is not unworthy of notice. It was previously feared that the expansive powers of the parietes of the bowels would be impaired by so large a scar passing through their centre: I was therefore agreeably surprised to find that, not only did the surrounding skin dilate without tightness or puckering, but that the cicatrix itself increased in length *three inches*, and in breadth *one-sixth of an inch*, during the period of pregnancy; thus affording an unusual and striking instance of the elasticity of newly-formed integument.

Fanny Gould has now been confined nearly seven weeks, and both the mother and child are doing well in every respect. The cicatrix has returned to the same dimensions as before the pregnancy; being five and a half inches in length, and one-quarter of an inch in breadth.—*Lond. Med. Gaz.*, Dec. 1851.

42. *Rupture of the Vagina, with Passage of the Fœtus into the Cavity of the Abdomen.* By M. DANYAÜ.—This occurred in the person of a little, robust, bow-legged woman, 28 years of age. She had been already pregnant three times, delivery having on the first two occasions been accomplished by perforation, owing to the great contraction of the entrance of the pelvis. On the third occasion labour was induced at the eighth month, and was followed by peritonitis, iliac abscess, and puerperal mania. On the 18th of June, 1848, arrived at the end of her fourth pregnancy, she came to the hospital with commencing

labour pains. The liq. amnii had been discharged nine hours; and under the influence of strong pains it was hoped that, owing to the small size of the child's head, the narrow orifice might be passed. The severity of the pains, however, rendered the woman very restless; and while tossing about she fell off the bed. She resumed her place unaided, and declared she had received no hurt. However, the pains at once ceased, the head could no longer be felt, the abdomen became very tender, and the woman's voice, pulse, and countenance underwent such alterations as to lead to the conclusion that the child had passed into the cavity of the abdomen. M. Danyau, called to her one hour after, resolved upon attempting turning in preference to the Cæsarian section. On passing in the hand, the uterus was found thrust upwards, a little forwards, and to the right—the entire left half of the vagina being separated from it. Owing to the small size of the child, its extraction was performed with more facility than had been anticipated—a perforation at the base of the cranium with Smellie's scissors sufficing to lessen the head sufficiently. The placenta was easily removed from the abdomen; and no intestine descended through the vaginal aperture. No hemorrhage occurred; but the patient seemed reduced to a state of hopeless exhaustion. She rallied, however, and in fifteen days, though advised to the contrary, she left the hospital. An examination *per vaginam*, made on the ninth and fifteenth days, furnished little idea of the severe lesion that had occurred—scarcely even any irregularity remaining at the place where the rupture had occurred, and the cervix uteri appearing just as it should do at the end of a fortnight. Soon after going out, she was seized with iliac inflammation, requiring antiphlogistic treatment, from which she completely recovered.

M. Danyau refers to Goldson's work (1787), in which the author relates a case similar to the above, and collects various instances to show that many cases reported as examples of rupture of the uterus have really been examples of rupture of the vagina. This view was enforced in the treatise *De Rupturâ Vaginæ*, published by Böer at Vienna, in 1812, in which additional confirmatory facts are adduced. All these cases have been republished in the *Archives Générales* for November, 1827. M. Danyau has not been able to find many cases on record, narrated with sufficient exactitude to assure their identity with his own, as examples of rupture of the peri-uterine portion of the vagina, with passage of the child into the abdomen. Of the 17 cases to which these accounts refer, and in none of which gastrotomy was resorted to, 4 only terminated successfully—those of Ross, Douglas, Smith, and the author. In the 13 others, death resulted, either because the nature of the case was misunderstood, its progress too far advanced for interference—such interference being too long delayed—or from consecutive accidents, of which last, however, only one example is on record. The rarity of such consecutive accidents, and the successful issue of the 4 cases, teach the necessity of prompt decision, as well as careful examination.—*Brit. and For. Med.-Chirurg. Rev.*, April, 1852, from *Mém. de la Société de Chirurgie*, tom. ii.

43. *A Stethoscopic Indication of the Separation of the Placenta.*—M. CAILLANT (*Thèse Inaugurale*, Paris, 1852) informs us that, while engaged assiduously in the practice of obstetrical auscultation, it occurred to him to investigate the relations between the cessation of the placental bruit and the disruption of the placenta from the uterine surface. While thus occupied, he accidentally made the discovery of a peculiar and characteristic sound, heard immediately after the expulsion of the child, and which he at once attributed to the peeling off of the placenta. In order to ascertain with certainty that this sound was so produced, he has been in the habit of auscultating the uterus during the whole process of labour, and thus made out that the sound in question was only audible immediately before the placenta was felt in the vagina. The sound consists in a repetition of cracklings, of considerable intensity, beginning and subsiding with each uterine contraction. It is said to be very different from the muscular bruit attending the contractions of the organ, as well as from the placental bruit itself, and more nearly resembles the dry crepitus of emphysema than any other known sound.—*Prov. Med. and Surg. Journ.*, May 26, 1852.

44. *Hemorrhage from Inversion of the Uterus, in which the operation of Transfusion was successfully performed: with Remarks on the Employment of Transfusion generally.*—JOHN SODEN, Esq., Surgeon to the Bath General Hospital, sent a communication, of which this was the title, to the Royal Medical and Chirurgical Society. The author begins by expressing his belief that the evidence in favour of transfusion is not generally known, and that false notions prevail with respect to its dangerous character. Having had an opportunity three years ago of proving its power, he was induced to examine into the results of all the recorded cases, and has presented a table of thirty-six in which the operation was performed in connection with the puerperal state. The thirty-sixth case was that in which transfusion was performed by himself. A lady was delivered of her third child rapidly, and the latter pains were so severe that the uterus was violently emptied of its contents, and became inverted; a gush of blood ensued, and the patient fainted. The placenta was detached, and the uterus returned; no further hemorrhage took place. In half an hour the patient had not rallied, and was insensible, cold, pulseless, and exsanguine in appearance; the breathing was at long intervals, stertorous, and jerking. She could just swallow stimulants by teaspoonful at a time, and every other means were used to restore her. After about an hour she became, however, worse; was no longer able to swallow, and the respirations became more rare and stertorous. Transfusion was then had recourse to. The opening was made in the external cephalic vein, and blood drawn from the husband was injected by means of an ordinary syringe of German silver, with a detached stopcock, previously well warmed. At first the blood would not pass, but returned through the opening in the vein; presently the opposition, from the contact of the coats of the vein, seemed to give way, and the blood, though impelled by a steady and moderate pressure, rushed rapidly up the vein. The effect was instantaneous; a convulsion seized the whole frame, and the muscles of the face were frightfully distorted: not more than an ounce was injected. The convulsions soon passed off, and the patient gradually recovered; it was full an hour before any pulse could be felt at the wrist, and she did not recover consciousness till the following morning. During that time stimulants were continually given; she remained for some time in a weak condition, but has since had another child, and is now doing well. The author then proceeds to analyze the table of cases, which shows that, out of thirty-six cases, twenty-nine were recovered from imminent danger; and it does not appear that in the fatal cases death was due to, or hastened by, the operation. In two, it may be presumed that death had occurred before the operation was performed; in a third, only a small quantity of blood could be procured; in a fourth, no effect; in the fifth, there were marked but not permanent effects; in the sixth and seventh, the women were too much reduced to be restored. The author considers the influence of the blood injected not to arise from the mere mechanical effect on the heart, but from a direct stimulation of the nervous system, and that the rapidity of the effect is modified greatly by the circumstances of the case, as regards the previous duration and cause of exhaustion, and by the character of the means used, as regards quantity, quality, and the mode of operating. With regard to quantity, it appears that a less amount was needed in proportion as the exhaustion arose from the suddenness, rather than the amount of the bleeding. The author thinks, that some cases have been lost from a fear of introducing too much blood, the dangers of which, he thinks, have been over-estimated. The quality of the fluid he regards as of great importance, and he alludes to the impropriety of using the blood of the lower animals. The blood need not be drawn from one individual only; that drawn from many may be taken, but it should be the blood of healthy persons. The want of success attending Dr. Simpson's cases of saline injection in uterine hemorrhage he attributes to the nature of the fluid used, while the same fluid might be serviceable in cholera, where the quality as well as quantity of the blood is interfered with. With regard to the mode of performing the operation, the author believes that a simple syringe, with a detached stopcock, plated or tinned on the inside, and capable of holding about three ounces, is the best instrument. The more complicated instruments, constructed to guard against the admission of air, he con-

siders needless, as the danger is an imaginary one. In one case the operation was successfully performed with a common toy syringe. The operation should, however, be performed at the arm or in some distant vein, in preference to the neck, where there might be some risk from the entrance of air. The convulsions which arose in the author's own case, he attributes, not to any irritating quality in the blood injected, but to the transition of the patient from a state of coma to that of syncope; the same thing was noticed in one case three times on the exhibition of stimulants only, and before transfusion was performed. The author then proceeds to notice the opinions of writers on the subject of the treatment of uterine hemorrhage, and concludes by making a few remarks on the general application of transfusion, which has been equally beneficial in cases of hemorrhage from other causes, and in exhaustion from inanition. It has been, too, of temporary service in phthisis and in cancer of the stomach. Its use is suggested in the collapse of typhus and in the diarrhoea of children, where exhaustion is threatened.

Mr. Barlow desired to ask a question respecting the case just read. He had understood that the beneficial effects had been produced by the injection of one ounce of blood. If that were all the blood used, it was, he thought, very surprising that such an extent of rallying should follow the employment of so small a quantity.

The president remarked that the author was not present, and, therefore, could not furnish the desired information. With respect to the smallness of the quantity of blood used, there were many cases alluded to in the table, in which also a small amount only was injected with beneficial results. The strange blood admitted seemed to have the effect of rousing the nervous energy and the heart, showing that it is not the quantity of the fluid, but the stimulus that is required. In other instances, very large quantities of blood were transfused.

No other remarks being offered by the fellows, the president applied to Dr. Robert Lee to furnish the Society with his opinion, and the results of his experience with respect to transfusion.

Dr. LEE had never seen transfusion of blood employed in any case of uterine hemorrhage, nor could he place much reliance on it in any of the varieties of flooding; he did not believe that in the case before the Society the recovery of the patient could be referred to the introduction of an ounce of blood into the venous system. In accidental uterine hemorrhage, if the membranes be ruptured early, and, that failing, if delivery be completed speedily by turning, the forceps, or craniotomy, and all the means in our power be employed to secure uterine contraction, comparatively few women will perish. He (Dr. Lee) had seen some recover where the symptoms were of the most alarming character, and recovery appeared absolutely impossible. In such cases, had transfusion been employed, the recovery would have been referred to it, and not to the real cause—the persevering and vigorous use of the ordinary remedies, pressure over the uterus, the external application of cold, and the internal administration of brandy, wine, and ammonia. In the hemorrhage which takes place after the uterus has been wholly emptied of its contents, the same remedies, if actively employed, are successful in a large proportion of cases. In most of the fatal cases of this description, which he (Dr. Lee) had seen, the common practice of introducing the hand into the uterus to excite it to contraction, by rubbing the inner surface, had been employed; and he had also seen cases where fatal uterine phlebitis could be referred to the same plan of treatment, which does not succeed in exciting uterine contraction, when the patient is greatly exhausted from previous profuse loss of blood. This practice of rubbing the inner surface of the uterus with the closed fist is not merely inefficacious in the worst cases of atony of the uterus, but it actually displaces the coagula from the exposed vessels which form one of the principal means employed by nature for the permanent suppression of the hemorrhage. If proper compression be employed over the hypogastrium, coagula can never form to distend the uterus, and, like a foreign body, prevent its contractions. Hemorrhage, to a dangerous extent, can never, he believed, take place where the uterus is contracted in the ordinary degree. The danger of uterine hemorrhage, from placental presenta-

tion, is much greater than in the accidental variety; but the mortality had been very considerably diminished in his practice since he had observed the fact, that in rigid conditions of the os uteri it is possible to seize the lower extremities of the child with two fingers, and deliver by turning, without introducing the whole hand through the os uteri. It is deeply to be regretted that an attempt, founded upon a grave anatomical blunder, should have been made to alter the practice established during the last century and a half in unavoidable uterine hemorrhage. The blood does not proceed from the placenta, as has been asserted, and it is, therefore, irrational and absurd to recommend tearing it away, or detaching it from the uterus with an iron instrument, and leaving the child within the cavity after having imprudently deprived it of life. He (Dr. Lee) had great faith in the established rules of practice in all the varieties of uterine hemorrhage.—*Med. Times and Gaz.*, May 29, 1852.

45. *Sudden Death after Parturition*.—Dr. KEITH communicated to the Edinburgh Obstetrical Society the following interesting case:—

In November last, I attended Mrs. — at her first confinement. The labour was very tedious, and as the pains were very severe, I kept her under chloroform for a longer time than I have done in any other instance—during thirteen hours, she was more or less under its influence. The slowness of the labour in the first stage was owing to the rigidity of the parts, and the early escape of the liquor amnii. As soon as the os uteri was fully opened, the head of the child descended into the pelvis: but, although no obstacle could be felt to its further progress through the passages, it remained for at least four hours making little or no advance, notwithstanding strong expulsive contractions. Under these circumstances, and fearing the infant might suffer from the long-continued pressure, I thought it right to have recourse to the forceps, by the aid of which the delivery was effected with great ease. I now found a second bag of membranes low down in the pelvis, and the feet of a second child presenting. The pains continued, and I brought away the second child, about twenty minutes after the birth of the first. It was a very small girl; the first was a boy of medium size.

Both placenta were found detached, and came away at once. There was no loss of blood whatever after the delivery of the first child, but along with the two placenta an enormous quantity escaped. The uterus, however, contracted almost immediately, and the discharge subsequently was not more than usual.

The effect of the sudden loss of blood was such that for a few minutes the pulse could not be felt at the wrist at all. The patient was still under chloroform, but for a short time she seemed in a state of syncope. This very soon passed off: the pulse returned to the wrist; she slept for a short time quietly, and, on awakening, she showed no unusual symptom.

From this time up to the fifth day she seemed to be making a fair enough recovery, if we consider the severity of the labour, and the quantity of blood lost. The discharge was natural; milk appeared in the breasts, though in small quantity: she took her food well; and, with the exception of an acute pain, apparently of a neuralgic character, in the lower part of the back, for a few hours on the second day, she made no complaint of pain or even of tenderness anywhere. During this whole period, however, there was an unusual degree of restlessness, and an undefined feeling of discomfort, for which, though frequently asked, she could give no definite cause. The pulse was also faster than usual, and very small. These symptoms I ascribed partly to a naturally irritable and excitable temperament, aggravated by the shock of the labour, and the loss of blood, and partly to the heart's action being deranged by an unusual degree of flatulency, from a disordered state of the stomach and bowels.

On the morning of the fifth day, the nurse told me that she had spent a good night, and her own principal request was that she might have a partridge for dinner. On feeling the pulse, however, it was much more rapid than on the previous day, and very feeble. As I could discover no other cause for this, I supposed she had been excited by the effort of nursing the child—an office which appeared to annoy her very much, and with which she would willingly

have dispensed. I, however, told the nurse, who had not the slightest apprehension of any mischief, the state of the pulse, and asked her to send for me immediately if she saw any unfavourable symptoms. I left at ten o'clock, and at twelve an urgent message was sent to my house. As I was out at the moment, Dr. Duncan was sent for; and, at half-past twelve, he found her pulseless, and evidently sinking. I saw her half an hour later; she seemed then to have very slightly revived, after taking a large quantity of champagne and brandy. The pulse was, however, quite gone at the wrist, the heart's action extremely rapid and feeble, the breathing very laborious. She was still perfectly sensible, and could speak without difficulty, and the extremities retained their usual warmth. Dr. Duncan suggested the presence of a clot in the heart, as the cause of the symptoms—an opinion which I at once adopted, as giving the only satisfactory explanation of the sudden sinking. Dr. Simpson saw her at half-past two o'clock. She died at three o'clock.

The body was examined twenty-four hours after death, in the presence of Dr. Simpson, Dr. Duncan, and myself. On opening the abdomen, a large quantity of serum was found in the cavity of the peritoneum, and a very thin layer of very soft lymph covered some portions of the intestines. This was most unexpected to myself, as I had entertained no suspicion whatever of the existence of peritonitis in even the slightest degree. The uterus showed no marks of inflammation, and was in all respects such as a healthy uterus would be at the same period after delivery. As the condition of the abdominal cavity appeared thus to show a sufficient cause for death, our expectation of finding a clot in the heart became less sanguine; but, on exposing that organ, we found the right side unusually distended, and, on opening it, the right auricle was found quite filled with a large mass of fibrin, quite colourless; and, especially at one part where it adhered to the wall of the auricle, of a firm and almost leathery consistency. It appeared altogether different from the clot which is often found in the heart after a lingering death. I am inclined to believe that the serous effusion into the peritoneum was in a great measure the result of the mechanical obstruction to the return of the blood to the heart. In one of the cases mentioned by Dr. Meigs—who is the only author who has written on death from the formation of a clot in the heart after labour—death occurred in forty-eight hours, after severe loss of blood. During this time, he says, she suffered the most inexpressible respiratory distress. "She filled her pericardium with serum, while her pericardial cavity became the subject of a great effusion." Upon examining the heart twenty-four hours after death, the right auricle and ventricle were filled with a firm whitish-yellow mass of fibrin, out of which every particle of colouring matter had been washed away.

Dr. Meigs is of opinion that the clot is more apt to form in consequence of the patient, after having lost a large quantity of blood, incautiously raising herself, and bringing on a fit of fainting. I could not ascertain that my patient had fainted at all, except at the time I previously mentioned, immediately after the extraction of the placenta. Is it possible that the clot of blood had then begun to form in the heart, and had given rise to the unusual feeling of restlessness and malaise, and that it had continued to make very gradual increase till the morning of the fifth day, when the continued transmission of blood through the auricle became impossible?

Dr. M. DUNCAN remarked that the interesting point in this case was the peculiarity of the mode of death. When he first saw and examined the patient, she had none of the appearance of a patient sinking under puerperal fever in any of its forms. The symptoms were distinctly those of asphyxia, modified. There was the dinginess of skin, blackness of lips, with great respiratory distress, and at the same time apparent freedom of the act of respiration. On carefully examining the hypogastrium, not the smallest amount of tenderness on pressure could be elicited. She was quite collected, answered questions with clearness, and complained only of the state of her breathing. These symptoms, he thought, were connected with the unusual clot found in the heart after death.

Dr. SIMPSON considered the case as one of common puerperal peritonitis, in which the symptoms had been more masked than usual. The effusions found

after death, in the abdomen and pelvis, showed the extensive nature of the peritonitis; and the effusion was, he thought, semi-purulent. Dr. S. had written his "Thesis" to prove that peritonitis destroys, by depressing and arresting the heart's action—a doctrine long taught by Professor Alison.—*Monthly Journ. Med. Sci.*, Jan. 1852.

46. *Sudden Death following Delivery*.—At a meeting of the Chirurgical Society of Paris, January 7, 1852, M. ROBERT introduced the subject of sudden death following deliveries without any apparent cause, the patients being to all appearance in perfect health.

M. Robert gave the case of a young woman, aged 25 years, who, much excited by the political events of the times, went from Paris to Versailles, to be confined of her third child. Two days after her removal, she was safely delivered, and nothing particular followed; her recovery being most satisfactory until the ninth day, when, upon being assisted from her bed, and about to partake of a meal, she suddenly sank down and died.

M. Robert had previously seen two similar cases. One, a young woman, non-primiparous, died on the sixteenth day—another, a woman who had borne several children, also died on the sixteenth day. The autopsy in these three cases showed nothing to account for death.

Can these facts be considered as a simple coincidence, or is death determined by the modification which the puerperal state produces in the organization?

Do *post-mortem* examinations throw any light on the matter?

M. Danyau replied that these facts are not very rare; he had observed them many times. M. Dubois, M. Morence, and M. Baudelocque had each seen examples. M. Danyau had attended a lady in the enjoyment of excellent health; her labour was easy, and her recovery excellent; on the twentieth day, he visited her about 11 A. M., and found her agitated and perplexed; in a short time after which, she passed into an adjoining chamber, and there suddenly died. At the autopsy, no air was found in the veins or heart—the only pathological change worthy of note was a vascularity of the pericardium, and slight effusion into its cavity. M. Danyau remarked that in all known cases death had occurred in an equally rapid and unseen manner; this patient was remarkably *embonpoint*. She took little exercise, and experienced oppression in walking; the heart was slightly fatty, a circumstance which had been noticed in England as predisposing to sudden death. Instances have been recorded of two women recently delivered, dying from this cause; but the causes have not been reduced to certainty. Death cannot be attributed to the introduction of air into the uterine veins immediately after delivery, for in that case death has always supervened rapidly; it is therefore evidently by extreme syncope.

M. Robert had been lately making some observations on the blood of parturient women, and suggested the possibility of the predisposition to this fatal syncope arising from chloro-anæmic state of the blood. M. Danyau, on the contrary, was of opinion that there was no indication of chlorosis in any of the cases he had seen.—*Monthly Journ. Med. Sci.*, March, 1852, from *L'Union Médicale*, Jan. 10, 1852.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

47. *Peach-Leaf Water*. By MESSRS. FELLEBERG and KONIG.—The authors distilled, in 1847 and 1848, peach-leaves with water, and the difference in the proportions of prussic acid in these two sorts of water was very considerable. The leaves which yielded the smaller proportion of prussic acid were those of the year 1848, when the tree had an abundance of fruit, whilst in the year 1847 it had only one fruit. Mr. König, in Bern, found in 1000 parts of peach-leaf water, prepared by himself, 1.407 of prussic acid. That prepared by Fellenberg, in 1848, contained in 1000 parts, 0.437 parts.—*Pharmaceutical Journal*, Dec. 1851, from *Central Blatt*.

T. R. B.

48. *Detection of Mercury in the Body of a Person dying of Mercurial Cachexy.* By M. GORUP-BESANEZ.—The subject was a woman, who, for twenty-five years, was laboriously engaged in silvering looking-glasses; but who, from the convulsive tremors that were induced, had been obliged to desist from her occupation for a year prior to her death.

The chemical results obtained by following the processes of Fresenius and Babo were as follows: The lungs and heart gave no trace of mercury, a very small quantity was detected in the liver, and none in the bile. A doubtful precipitate was thrown down upon the gold plate by the brain, while the spinal column presented no traces. That any remains of it should be found after a year is remarkable; and is confirmatory of other facts, proving how long certain metals, *e. g.*, antimony, may be retained in the economy. That the liver was the only organ in which it could then be detected, confirms the doctrine that metallic poisons are usually found longest in that organ.—*Chem. Gaz.*, Nov. 15, 1851, from *Buchner's Repertorium*. T. R. B.

49. *On Poisoning by Datura, in Bombay.* By Dr. GIRAUD.—This species of poisoning excites great interest in Bombay, in consequence of the frequency of its occurrence, and the secrecy with which the crime is perpetrated. During 1848, there were forty-nine males and two females treated for it in the Native Hospital. Of this number, four only exhibited alarming symptoms, and no one proved fatal. The datura, indigenous to India, is probably less fatal than the *D. stramonium*, several examples of fatal poisoning by which are on record. The powdered seeds are employed, concealed in rice, or other grain, but the quantities given are unknown, so secret has the administration (usually to facilitate robbery) been kept. In many cases, three stages of symptoms are observed: Primary delirium, sopor, or even coma; and secondary delirium—a single stage, that of delirium only, occurring in mild cases. The primary delirium may be vociferous or merely garrulous, the patient usually manifesting excessive timidity. In both this and the soporific stage, he is constantly engaged in picking at real or imaginary objects, and sometimes in performing such antics as to render laughter on the part even of friends unavoidable. Several of these movements seem to depend on perverted vision, which destroys the power of judging of the distance of objects, and which may be due to the widely dilated pupil, a persistent symptom. The pulse and temperature, usually natural, undergo in some cases extremes of exaltation and depression. In the majority of cases, the soporose stage is absent, the delirium subsisting for from six to ten hours. On recovery, the person usually recollects nothing since the meal at which he was poisoned, so rapid are its effects. Emetics are given if the patient is seen early enough. Afterwards leeches are applied to the temples, the cold affusion to the head, while small doses of opium with tartar emetic are administered internally.—*Brit. and For. Med.-Chirurg. Rev.*, Jan. 1851, from *Trans. of Med. and Phys. Soc. of Bombay*. T. R. B.

50. *Question of Pregnancy in Bodies far gone in Putrefaction.*—Dr. CASPER relates an interesting case in exemplification of a point he has frequently illustrated, *viz.*, the much longer exemption which the uterus obtains from putrefaction compared to other organs. A young woman was missed, and it was suspected that she was pregnant, and that her paramour had possibly made way with her. Nine months afterwards her body was found in a privy, having been macerated during that period in feces and urine. The horrible condition it was reduced to, may be imagined, and was such as to overcome the most hardened *habitués* of the dissecting-room. Many of the soft parts had fallen from the bones, and the rest were converted into a gray fatty matter, so that anything like a *post-mortem* examination became impossible. Still, as from old experience, Dr. Casper expressed his conviction that, if the woman had been pregnant when she died, the foetal bones would be recognizable, the abdomen was opened. Its muscles were converted into adipocire, and the various parts of the abdominal canal were not distinguishable from each other; still, there was the uterus of a light red colour, firm in texture, and of the normal size and form of a non-pregnant woman. The cavity also was normal in appearance, and quite empty.

Thus, if the investigation could not ascertain the cause of death, it at least proved she was not pregnant, and removed the aspersion cast upon an innocent person.—Quoted from *Casper*, in *Med. Times*, Nov. 1851. T. R. B.

51. *Eaters of Arsenic*.—A letter from Vienna, dated Oct. 28, 1851, to the *Gazette des Tribunaux*, has the following details:—

A few days ago, the assizes opened at Colli, in Styria. Among the cases, was that of a charge of poisoning. The victim was an old soldier, named Wurtzel, who died suddenly in the month of May last, and in whose stomach, on examination, arsenic was found. The Vienna newspapers, in giving an account of the case, report that the court, in submitting it to the jury, presented the following question: "Was the deceased an arsenic eater?" To which the jury replied, "Yes, he probably was."

This question and answer have excited great interest, and it was at one time supposed that the report was altogether supposititious or erroneous. But the following explanation is now given on good authority: In the provinces of Lower Austria and of Styria, bordering on Hungary, it is quite common with men, to chew particles of arsenic, mixed with their bread, very much like the Chinese chew opium. The absorption of the small quantity thus used, induces a fresh and clear complexion, and, to a certain extent, brightens the intellectual faculties; but with those who make a habit of thus eating it, there follow, before long, debility and a premature death. Females do not at all indulge in it, and the few men thus distinguished, are known by the name of *eaters of poison*.—*Journal des Connaissances Med.-Chirurg.*, Dec. 16, 1851. T. R. B.

52. *Elimination of Certain Poisons. Comparison of the Results. Action of Ethylamine and of Amylamine on the Animal Economy*. By M. ORFILA (said to be the nephew of the distinguished toxicologist).—When a poison has been absorbed and carried into the different tissues of the living body, does it remain for an indefinite time in these tissues, or is it expelled? If the latter, how long a time is required? And, lastly, in what manner is it expelled?

It requires a long time to perform conclusive experiments, which shall reply to these questions. Thus, at the end of eighteen months, I can only submit the results obtained with four poisons—corrosive sublimate, acetate of lead, sulphate of copper, and nitrate of silver. It would seem from these, that when *corrosive sublimate* has been administered for some time, it will generally disappear from the organs in eight or ten days (I found it but once on the eighteenth day): that *lead* and *copper* are found in the liver, the intestinal coverings, and in the bone, eight months after we have ceased giving it by the stomach; and that *nitrate of silver* may possibly be proved to be present in the liver in some instances, at the end of six months, but is not found in any organ seven months after it has been administered.

During these researches, I found lead, copper, and mercury to pass off by the urine; but while the first two appeared only two days in that secretion, after giving a saturnine or cupreous compound; the last one, mercury, manifested itself for eight days, after taking a mercurial preparation. I have never been able to detect silver in the urine of those who had taken the nitrate.

The importance of attention to this subject may be illustrated by some examples.

An individual had undergone a course of treatment with corrosive sublimate, and died four months after ceasing the course. He is poisoned with a mercurial preparation. On analysis, mercury is found in his organs. Now, according to my experience, this mercury was not derived from the preparations taken four months before his death, since, according to observation, it never remains longer than eighteen days.

When a man survives fifteen days after being poisoned with corrosive sublimate, it is quite probable that the experts will find no trace of mercury. They will, however, commit a gross error, if they conclude from this that there has been no poisoning.

Again, a manufacturer of lead died two months after he had altogether given up his occupation. On examination, lead was found in his organs. Was this

the result of poisoning, or of his previous occupation? We can only solve this problem, by weighing carefully the history of the symptoms from their commencement to the fatal termination, and compare these with the results of the chemical inquiry.

Comparison of the processes required in these investigations.—There are three, which are employed for the detection of lead and copper, and they scarcely differ from each other, except as to the agent used for the carbonization of the animal matter. These agents are: 1, nitric acid; 2, nitric acid mixed with one-fifth of the chlorate of potash; and, 3, sulphuric acid. I deduce from my experience, that carbonization by nitric acid is superior to that by either of the others, but the second is still superior to the third.

For mercury, the best process is to carbonize with sulphuric acid. M. Lannaux has proposed to destroy the animal matter with a current of chlorine, but I have not found this to answer as well as the others.

Action of Ethylamine and Amylamine.—Being struck with the analogy that exists between the physical and chemical properties of these bases and those of ammonia, I was desirous of ascertaining whether these effects on the animal economy were also analogous. And on dogs, it was found that the action of these alkalis and of ammonia, perfectly resembled each other, in the symptoms of poisoning, and the lesions of the tissues. And this analogy remained constant, whether they were introduced into the stomach, or whether the animals were made to breathe an atmosphere charged with them.—*Comptes Rendus*, Jan. 15, 1852.

T. R. B.

53. *Dyson v. Dyson.*—This was a case heard in the Vice-Chancellor's Court, before Sir G. Turner, so far resembling the notorious Gardner Peerage case, that its main point depended on the duration of the period of utero-gestation; it being alleged that the plaintiff, an infant, though born in wedlock, was not the child of Dyson, the defendant. It was proved, in the cause, that the alleged father left his wife in the Island of Madeira, in February, 1849, that she returned to England, in the August following, and that the plaintiff was born on the 8th of January, 1850, being a period of 336 days (or 11 months 6 days, each month comprising 30 days), after the father had left Madeira. Mr. Hare, for the plaintiff, read the evidence of several medical witnesses of eminence, who deposed to the possibility of the period of gestation being protracted to a period of 330, or even of 336 days; and referred to a case in which a foreign court had decreed a child born 336 days after access, to be entitled to the succession. The vice-chancellor referred to the Gardner Peerage case, in which a period of non-access considerably shorter than the period in question had been held by the House of Lords, to be decisive against the legitimacy of the child, and said that he could not make a decree in favour of the plaintiff on the present evidence; but the plaintiff was entitled to an issue; which, however, his counsel declined, and the bill was dismissed. It appeared that the possession of a share of a large landed and personal estate was involved in the affair.—*Med. Times and Gaz.*, Feb. 28, 1852.

T. R. B.

54. *Suicide or Homicide.*—A case occurred at the University College Hospital, under the care of Mr. Erichsen, of a man who attempted to destroy himself by cutting his throat. The patient is progressing favourably, but there is a peculiarity in the case which might have been of great importance had he succeeded in killing himself. It appeared that he seized the cutting instrument with both hands, and inflicted a wound on the *right* side of the neck. Now it is generally held, that unless a man is *left* handed, he cannot do this; and had the man died under doubtful circumstances, it might have been argued, that the wound was inflicted by a second person, and suspicions might have been raised against perfectly innocent persons. Mr. Erichsen stated that a case of a similar nature was received into the hospital some years since. These facts are certainly of great value, and should be carefully noted.—*Lancet*, Jan. 31, 1852.

T. R. B.

55. *New Test of Mercury.*—If a strong solution of iodide of potassium be added to a minute portion of any of the salts of mercury, placed on a clean,

bright plate of copper, the mercury is immediately deposited in the metallic state, appearing as a silvery stain on the copper, which cannot be mistaken, as no other metal is deposited by the same means.

By this method, corrosive sublimate may be detected in a drop of solution, unaffected either by caustic potash, or iodide of potassium. In a mixture of calomel and sugar, in the proportion of one grain to two hundred, a distinct metallic stain will be obtained with one grain, which contains 1-200th of a grain of calomel; in like manner, 1-400th of a grain of peroxide of mercury may be detected, although the mixture with sugar is not in the least coloured by it.

With the preparations of mercury in the undiluted state, this process acts with remarkable accuracy; the smallest possible quantity of calomel or peroxide of mercury, such as would almost require a magnifying lens to perceive, placed on copper treated with iodide of potassium, will give a distinct metallic stain.

The advantages of this test may be briefly stated as follows: 1. It is a delicate one, only inferior to chloride of zinc, and the galvanic test of zinc and gold. 2. It is easy of application. 3. It requires a very small portion of the substance to be examined—a matter of no small import. 4. Acting on insoluble as well as on the soluble salts, it obviates the intermediate process of solution. 5. When it acts, its indications are decisive.

As to its disadvantages, the only one that seems tenable, is that, though it acts on minute portions, still, that must be in a concentrated condition. For instance, though we may detect the 1-1000th of a grain of corrosive sublimate in a drop of water, we cannot detect it in a drachm; but this may, of course, be remedied by evaporation.

As to the theory, most probably, the iodide forms a soluble and easily decomposed salt, with the various salts of mercury; that is, an iodide soluble in excess of the iodide of potassium.

The foregoing is the substance of a paper read by Mr. Arthur Morgan, City of Dublin Hospital, at the first meeting of the Student's Medico-Chirurgical Society, Dec. 12, 1851.—*Pharm. Journ.*, Feb. 1852, from *Dub. Med. Press*.

T. R. B.

56. *Morphine and Chloroform*.—The following are extracts from a London newspaper, *The Atlas*, April 10, 1852; and are, therefore, not as good authority as a medical journal, but still they may be correct in all respects:—

“A physician in Prague has just died a real ‘martyr to science.’ He had been in the habit of taking strong doses of poison, after swallowing an antidote, in order to note their effects. On the 23d ult., he took so large a quantity of morphine, that all the efforts of some medical friends present at the exhibition could not save him.”

“In resuscitating from an overdose of chloroform, galvanism is the only chance. Keep up a current of electricity through the fifth nerve, medulla oblongata, phrenic nerves, and diaphragm, as long as respiratory movements can be produced, and let the patient have plenty of fresh air or oxygen gas, and the case must do well, for the blood must remain fluid for a long time, and circulation will go on as long as respiration continues to go on artificially. The blood and the air-cells throw off their load, and in proportion as the pneumogastric, medulla oblongata, and motor nerves, slowly resume their functions, so respiration begins to assume a less artificial character; at length, the cerebrum aids us, and respiratory movements, both voluntary and involuntary, keep up the functions of life unaided.”—*Dr. Harepath*.

T. R. B.

57. *Smothering voluntarily produced*.—The following case, quoted from *Henke's Zeitschrift*, at once reminds us of the melancholy story of “Genevieve,” in Samuel Rogers's *Italy*, though deprived of the romantic interest thrown around that by the skill of the poet.

The narrative is given by Dr. Roth, and the question submitted to the reporters was, as to whether the death of H—, a servant-maid, had been the result of suicide, or of homicide.

The deceased was well formed, about the middle height, and about twenty-five years of age. She had been seen to retire to her sleeping-room, at 9 o'clock one evening, in her usual state of health and spirits. The apartment was only separated by a partition from the one in which her master and mistress slept, and was over a room occupied by others of the household. At half past 5 o'clock on the following morning, the master knocked against the partition to awaken H., but receiving no answer, supposed she had risen and gone out to her work. On getting up, however, he found all the doors and windows of the house closed, when he went into the servants' room, but did not find her there. On the bed was an axe of a peculiar shape, employed in that part of the country for clipping off branches from the trees, and which used to hang behind the door. The blade of the axe rested against the back of the bed, and the handle on the bed. Beside it lay the best bonnet, which she used to keep in her chest. The bed appeared to have been slept on. After searching the well, lest she had drowned herself, H.'s father was sent for, from a neighbouring village. On his arrival, he suggested that the chest should be opened to learn in what trim his daughter had left the place. Finding the chest locked, and the key missing, a blacksmith was got to force it open, when the body of the servant was discovered in the chest, lying in a prone position, on the left side, with its knees drawn up, the upper extremities flexed, and the missing key grasped in the woman's right hand. The chest was about four and a half feet in length, and of proportionate depth. It locked itself on the fall of the lid, and could not have been opened from the inside. The corpse was nearly dressed, and the vest (camisol) was put on with its inner side out. On the following day, the body, which had been removed and laid on a bed, was viewed by the reporter. The cuticle was abraded and reddish-brown at seven or eight points, about the centre and upper part of the forehead. The largest of these abrasions corresponded with the thick part of the axe, and underneath them, the integuments were slightly swollen and bluish. The face and upper part of the chest were mottled with cadaveric lividities, the ears were blue, the eyelids closed, the conjunctivæ injected, and the pupils dilated. There was bloody froth about the lips and nostrils, partly dry, partly fresh, and giving this part of the face a blood-stained appearance. Bloody froth was issuing at the time from the right nostril. The mouth readily opened, showing the tongue in its natural position. The key was still grasped in the right hand. With the exception of the abrasions on the forehead, no traces of injury were detected on the body. The clothes were entire.

From the foregoing circumstances, the reporter was of opinion that the deceased had employed the axe which hung in her room, to kill herself, in the way she had seen others slaughter oxen, and that, failing in the attempt, and, perhaps, ashamed of the injuries on her forehead, she had then shut herself up in her chest, and perished by smothering. This conclusion satisfied the law authorities so completely, that they decided that there was no necessity for making a *post-mortem* inspection.—*London Med. Gaz.*, Sept. 5, 1851.

T. R. B.

58. *Case of Poisoning by Atropin.* By Dr. JAMES ANDREW, M. D., of the Royal Infirmary, Edinburgh.—Sarah Jackson, aged twenty-one, was a patient of the Infirmary, and during her residence there, in consequence of a dimness of vision in the right eye, succeeding iritis, was directed to apply a drop of a solution containing atropin, every day, to the affected organ. She was doing so well, that she would probably have been discharged on the next day, when, on rising from bed, she asked another patient to hand her her medicine (which was a draught of bitters, that she took every morning). The solution of atropin was by mistake handed to her. This originally contained two grains of atropin, one drachm of diluted acetic acid, and one and a half ounces of water. On measuring what remained after the accident, it was found to be seven drachms, and as the fourth of a drachm had been used as a collyrium, it follows that she must have swallowed between five and six drachms of the solution, or about two-thirds of a grain of atropin. Immediately on swallowing, she became sensible of a burning feeling in her throat, and said to those around

her that a mistake had been made, but that she supposed what was good externally, could not be very injurious when taken inwardly. But in a few moments her eyesight failed her, and she had a desire to move about, but was deeply oppressed, and her voice failed. The nurse, aware of the accident, gave her large quantities of milk, which soon induced vomiting. In fifteen minutes after the accident, the pupils were seen to be widely dilated, the eyeballs congested and prominent, with loss of sight. The muscles of the mouth and eyelids frequently twitched, and her pulse was 130. She was very restless, and on attempting to get out of bed, staggered, and would have fallen, if she had not been prevented. She complained of a burning heat in her throat and stomach. The vomiting was kept up, by giving thirty grains of sulphate of zinc. In two hours, and when it had ceased, she became rather drowsy. Two drops of croton oil were then administered, cold cloths applied to the head, and bottles of hot water to the feet. As the drowsiness still seemed to increase, forty minims of the aromatic spirit of ammonia were ordered, to be repeated every half hour, if necessary; and the house physician was instructed to apply the galvanic battery should there be greater amount of narcotism. This was, however, not required; but an additional quantity of croton oil was necessary, in order to move the bowels. The next day, she was at first restless, then violently agitated, and at last so furious that it required several persons to hold her. The straight-jacket was used, but she talked incessantly, tossed about in bed; with a quick pulse, eyes bloodshot, pupils dilated, and face highly flushed. She continued to hawk and spit, and her bowels were moved twelve times during the afternoon and evening. Towards night she became quiet, apparently exhausted by the great efforts she had been making. On the following morning, there was still a great degree of nervous tremor of the eyelids and hands; and when spoken to, she started, as if alarmed. But in other respects she was improved: and this continued with some variableness, until the 4th of November, when she was dismissed cured. She took the poison on the 21st of October. During what may be styled the period of convalescence and recovery, the prevailing unfavourable symptoms were restlessness, dilatation of the pupil of the left eye—tremulous motion of the eyelids—cold feet, and costiveness. Her vision was frequently diseased—seeing objects double and treble, then flashes of light, and occasionally spectres and other illusions.

Dr. Andrew compares this case, with recorded ones of poisoning with the extract of belladonna, from which it appears that the effects of the latter are far less rapidly developed, and of course that much larger quantities are required to induce poisonous effects.—*Edin. Monthly Journ. of Med. Sci.*, Jan. 1852. T. R. B.

59. *Bite of the Viper in France.*—M. C. Dumeril, a professor in the Garden of Plants at Paris, was walking, on the 12th of October last (1851), in the forest of Senart. He observed a viper, whose large size induced him to suppose that it might be a new species, and resolutely seized it with his hand, intending to kill it by breaking the spine; but whether the animal was too powerful, or was not held with a sufficiently powerful grasp, it turned and bit him no less than five times in his hand and arms before the professor could succeed in destroying life.

He was fortunately accompanied by his son, a physician, who sucked the bites and applied lunar caustic. Still, the poison continued to operate. Dumeril, after fainting twice, was attacked with vomiting, and continued in a dangerous condition for twenty-four hours. He has, however, perfectly recovered.—*Revue Médicale*, Oct. 1851.

60. *On the Hydrated Peroxide of Iron and Magnesia as Antidotes in Poisoning with Arsenic.*—By J. HADLEN. The author has satisfied himself by experiments, that, to completely precipitate one part of arsenious acid within five minutes by hydrated oxide of iron, twenty-two parts of the latter are required. Some which had been kept for more than a year had lost more than two-thirds of its power; in another case, it had lost one-third of it. As is well known, on account of this property of the hydrated oxide of iron, Fuchs has recommended

the mixture of hydrated peroxide of iron and magnesia, i. e., the mixture of a solution of persulphate of iron, which yields from seventeen to eighteen per cent. of the hydrated peroxide, dried at 212° F., with excess of caustic magnesia. In the Wurtemberg *Pharmacopœia*, the mixture of perchloride of iron with excess of magnesia is prescribed. The author finds that both mixtures precipitate the arsenious acid equally as well as the pure hydrated peroxide of iron, so that there is no chemical objection to their use.—*Chemical Gaz.*, May 1, 1852, from a German journal.
T. R. B.

61. *Magnesia as an Antidote to the Salts of Copper.*—M. ROTCHA has published in the *Gazette Médicale des Strasbourg*, some observations, which tend to prove: 1. That calcined magnesia completely arrests the symptoms of poisoning by sulphate of copper, when it is administered sufficiently soon after the injection of the poison. 2. That the dose of magnesia necessary to neutralize the effects of the salt of copper is at least eight parts of the antidote to one of the sulphate. 3. That as the magnesia behaves to other salts of copper, as it does to the sulphate, preceding the formation of a soluble copper compound in its presence, it is very probable that it will serve as an antidote to all the salts of copper.—*Revue Médicale*.
T. R. B.

62. *Impotence.*—Medical Society of London, February 21, 1852. Mr. HUNT related the following case of a lady, aged thirty, of refined mind and feminine development, who consulted him for stricture of the rectum. The meatus urinarius was more capacious than usual, and there was *no vaginal aperture*, the perineum being continued from the anus to the meatus. The sphincter ani was very dilatable, but no trace of the fundus uteri or of ovaries could be felt per rectum. The os coecygis was attached at right angles to the sacrum, reducing considerably the distance between the former bone and the pubis. The clitoris and labia were normal, the mammae well developed, and sexual feeling was admitted to exist probably in its normal degree. She had of course never menstruated, nor had there been any vicarious discharge. Yet she suffered no periodical inconvenience—not enough, at least, to attract her notice. The pubertate epoch occurred at the usual age, and the general health was good. It was the opinion of Mr. Hunt, and of another surgeon who examined her, that certainly the uterus and vagina, and probably one or both ovaries, were wanting, and yet the mature female development, both of mind and body, was otherwise perfect.

Dr. MURPHY mentioned a case in which the vagina terminated in a *cul-de-sac*, and there was no sign of an uterus. The woman was handsome and well-formed.

Dr. CAMPS mentioned two cases in which there was no reason to suspect any malformation, yet the women had never menstruated.—*Lancet*, March 6, 1852.
T. R. B.

63. *Blood Stains.*—In concluding the evidence given a short time since at the Marylebone Police Court, before Mr. Broughton, in the case of William Styles, Dr. Hassall made the following observations, important in a medico-legal point of view, in reference to blood stains: "That while the determination, by means of the microscope, of the nature of blood stains, even when very recent, formed on cloth, linen, and other soft and porous textures, is usually a matter of considerable difficulty, and is often impossible, the determination of such stains, however old, as are placed on glass, porcelain, wood, and other hard and smooth substances, is in general unattended with difficulty, and extremely satisfactory. This difference is to be explained thus: in the one case, the fibrin, albumen, and serum of the blood, are in part absorbed and pass into the cavities of the hairs or fibres of the wool or linen; the blood corpuscles are thus deprived of their preservative fluids, and shrink up—become misshapen or disintegrated: while, in the other case, the fibrin and albumen harden around the blood-disks in drying, and thus preserve them slightly altered in form only." Dr. Hassall stated that he had frequently succeeded in identifying the blood of

different animals, preserved on slips of glass, after a lapse of six years. The stains should be examined in white of egg and not in water.—*Lancet*, March 27, 1852. T. R. B.

64. *Early Viability*.—As these cases are always interesting, we may cite the particulars of one recently communicated to M. VELPEAU with complete authentication. Madame D—, at 35, was not aware until she arose, 15th June, 1850, that her menstrual period had come on, she having had connection that morning. The discharge ceased in the evening, and the suppression remained permanent without injury to health. After a time, signs of pregnancy were observed, and she went on very well until 9th October, when she was much shaken during a journey. Next day some reddish water was discharged, and continued to be so, at intervals, until the 27th December, when she was delivered of a very delicate infant, having a skin so intensely red, that the friction caused by washing was forbidden lest it might cause bleeding. Its power of generating heat was very feeble, so that constant attention was required to this point: but it swallowed a little food, and on the tenth day took the breast feebly. It had not increased in volume much by the 15th March, the natural term of the pregnancy, though its weight was greater. Its development is now that of an ordinary child of its age. The child was, therefore, born 6 months and 10 days after conception, and the case is additionally interesting from the fact of the waters having commenced discharging at 3½ months, without abortion ensuing. The French law fixes 6 months or 180 days as the term of legal viability.—*Brit. and For. Med.-Chir. Rev.*, April, 1852, from *Gazette des Hôpitaux*, 1851, No. 74.

65. *Fractures of the Fœtal Cranium without External Violence*.—The cases collected by Dr. SCHWÖRER of Freiburg, and others, have clearly shown that fractures of the cranium may be produced during parturition by the expulsive efforts of the uterus forcing the head of the child against the bones of the pelvis. The three following cases confirmatory of the same fact have recently been recorded in *Casper's Wochenschrift*, 1851, Nos. 38 and 40.

Two are related by Dr. FLÜGEL and one by Dr. SCHILLING.

The first was a face presentation which terminated in seven hours without aid, the latter pains having been both forcible and rapid. The child was still-born, although it had been ascertained to be alive just before delivery, immediately prior to which a loud crack was heard by the pupils. At the *post-mortem* examination, the pericranium was observed raised into a bloody swelling at three different points of the left parietal bone; and on opening these tumours, fractures from 11 lines to 1 inch and 4 lines in length were discovered. In the second case the presentation was natural, but the proposition to use the forceps on account of defective pain, so alarmed the mother as to bring on a succession of severe pains, which, together with her excessive exertions, soon terminated the labour. The child, which was large, died six hours after birth, in convulsions. Two fractures of the left parietal, $1\frac{1}{2}$ and $\frac{3}{4}$ of an inch long, were found. The vessels of the brain were found highly congested, and its cavities contained bloody serum. Had these appearances been observed in the case of a suspected secret birth, the statement of their having been produced during the natural course of a labour rapidly terminated, would probably not have received credence.

Dr. Schilling was only called to his case after delivery, and was shown a dead child, having the parietal bones broken in several places and covered with blood. He supposed this to have resulted from external violence, but received the following statement from the persons present at the birth. It was a first labour, the pains being at first slight and the woman tossing about. When severe pains set in, its progress was still gradual, during the fifteen hours they continued. Just at its termination she was seized with dreadful spasmodic pains, and remained for awhile unconscious. The child soon followed after her recovery, but it was stillborn.—*Brit. and For. Med.-Chir. Rev.*, April, 1852.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

On Belladonna as a Prophylactic in Scarlatina. By GEORGE L. ANDREW, M. D., of La Porte, Ind. The efficacy of belladonna as a prophylactic in scarlatina, has been the subject of a good deal of controversy, and the following facts may therefore be interesting, as a contribution towards the settlement of this question.

The scarlet fever manifested itself here in November last for the first time, as an epidemic, for 12 years. There was therefore no lack of material for its ravages. The general experience was, that in the families in which it manifested itself, few members who had not previously been subjects of attack, and especially few children, escaped. When the epidemic was at its height, I commenced the use of the English extract of belladonna, in the manner recommended by Dr. Mitchell, in the 3d vol. of the Transactions of the American Medical Association; I prepared a considerable quantity of the mixture, and at once distributed it to some 80 children, including all those properly belonging to my diocese, who could probably be exposed to the infection. Of these *one only was attacked with scarlatina*. Among the noticeable circumstances attending this trial, it is proper that I should mention two or three.

Sarah S., aged 11 years, the case just now excepted, had commenced the use of the belladonna but about 4 days before her seizure. The period of incubation of scarlatina is said to range from two or three to twelve or fourteen days. It is altogether supposable that the poison was already in possession, when she commenced the use of the prophylactic. Her constitution is a decidedly scrofulous one, she having suffered severely and protractedly at different times with strumous ophthalmia, ozæna, otitis and glandular enlargements. Her attack, however, was an unusually light one. Her brothers and two sisters, with two other children residing close by, and whose frequent visits rendered them almost as of the same family, continued the belladonna and all escaped.

Sarah Dunn, aged 12, was taken from the county almshouse into the family of Mr. S., on the seventh day of the convalescence of Sarah S. Hitherto she had not been exposed to the infection. The use of belladonna was neglected in her case, and in about two and a half days after her entrance into the house, she was seized with scarlatina, and removed to the county house. There were at this time six children in the house, whose ages ranged from 2 to 7, and from the crowded state of the establishment, all attempts at isolation were useless. I placed all of them immediately upon the use of belladonna, and though constantly in the vicinity of the patient, not one was attacked.

Mr. M., the father of four children, had the symptoms of incipient scarlatina, and the children at once commenced the use of belladonna. The father had a moderately severe attack but all the children escaped.

This, Mr. Editor, is my mite towards the settlement of this vital question. It is a vital question, and *may be settled*. I am aware of the difficulties which surround the full and complete establishment of almost any fact in therapeutics; of the fallacies which environ medical experience and observation; and especially of the capriciousness evinced by scarlet fever in regard to the sub-

jects of its attack; but I would respectfully submit that the inestimable benefit which would follow the establishment of this fact, if fact it be, would amply repay for the outlay of time and labour bestowed upon it. As regards the above, it is true that "one swallow does not make a summer," neither does one fact establish a general principle, yet a careful collation of cases in which an undoubtedly pure article was used, by the profession generally, would soon set this matter at rest. No authority, however high, should deter from such experiments by the promulgation of the dogma that "no experience of a merely negative character can be regarded as of much weight when contrasted with such positive experience as is on record." The carrying out of such a principle into practice would throw us back upon medical prophylaxis as it was 100 years ago, and the world would again be desolated by variola.

P. S.—The epidemic has fully subsided in this vicinity, and I beg to add the following item as completing the lesson which I have learned during its progress, in reference to the prophylactic powers of belladonna.

The family of the Rev. Mr. S. visited some friends in this village, just as the scarlatina was taking its leave. In a few days after their arrival two of their three children were brought down with the prevalent disease. The family of Mr. C., which they were visiting, had already been on the use of ex. belladonna, and the youngest to the production of scarlatinoid eruption. Segregation was impossible, and so it was scarcely and only at first attempted. The children, five in number, with ages ranging from 9 months to 17 years, were freely and fully exposed, every day, excepting, as before stated, a very short time at the first, and then most imperfectly. Every one escaped.

The, to me, interesting point in this case is the seemingly permanent character of the prophylaxis. The children of Mr. C. had not taken the extract for some four weeks preceding, and did not resume its use when the danger seemed thus imminent.

LA PORTE, INDIANA, June 2, 1852.

New Symptom of Pneumonia. By WM. M. BOLING, M. D., of Montgomery, Ala.

I have frequently observed in pneumonia a symptom of which I do not remember to have seen mention made by any other, and which I have never noticed in any other disease. It consists in a deposition on the teeth, just along the margin of the gums, of a matter of different shades of colour, from a light orange to a dull vermilion, forming a line about the sixteenth of an inch wide, and of a deeper tint at the gums, and paler as it recedes. Unlike the blue line said to be found in the margin of the gums in lead poisoning, and the line on the same part, of a deeper shade than the rest of the gum, noticed by Dr. Theophilus Thompson in phthisis, and mentioned in the *London Lancet*, for September 1851. The appearance in question is seated on the teeth; from which, indeed, with care, it may be principally removed by wiping, though, occasionally, a somewhat durable stain remains upon the enamel.

In regard to the manner of its production, I am at a loss for an explanation, though it is probably an exudation from the margin of the gums. At first I thought it might be produced by the deposition of the colouring matter of the expectoration, but I have seen it in cases in which bloody matter was not expectorated; indeed, in a few cases of latent pneumonia, where there was neither cough nor expectoration; and, in one instance, I was led to suspect the presence of this form of the disease, which I ascertained with cer-

tainty by auscultation, by this symptom alone. Perhaps the miasmatic poisoning of the system may, in some way, lead to its development in pneumonia; for it is likely, that, if it were of as frequent occurrence in other localities as in this, it would have been noticed before. Still, I do not remember to have seen it in any of the forms of uncomplicated miasmatic fever.

I have made no note of the proportion of cases in which I have observed it, but I think, at least, in one-third or one-fourth. The cases in which it is present are generally severe, it being very rarely found in mild cases.

Poisoning by Oil of Tansy. By W. W. ELY, M. D., of Rochester, N. Y. The subject of the following painful occurrence, was a respectable young lady, in ordinary health, engaged at the time in teaching school. Having arrived at her menstrual period, she procured what she supposed was the essence of tansy, designing to take it to promote the catamenial discharge. On the evening of August 15, 1836, she took *one teaspoonful* of the medicine, which proved to be *oil of tansy*. From the speedy supervention of alarming symptoms a messenger was sent for me, a distance of two miles. Being unable to attend personally she was promptly visited by my partner. The oil, however, had operated so energetically and rapidly that on his arrival nothing seemed likely to be of any avail, and nothing of any consequence was done.

From the record which I made at the time, it appears that she first complained of dizziness and became insensible in about 10 minutes—a succession of convulsions supervened, with frothing at the mouth, laborious respiration and irregular pulse, and she died in *one hour and a quarter* after taking the oil.

It may be proper to add that another young lady in the family, also took of the medicine at the same time, but vomited very soon, and suffered no inconvenience.

Bone in the Heart of the Bos.—By J. L. PEIRCE, M.D., of Bucks Co. Pa. In the winter of 1836 and '37, I was lecturing before the Northern Lyceum of the city and county of Philadelphia, upon the respiration and circulation; and, for the purpose of illustrating the subject as clearly as possible, I had the heart and lungs of an ox that had been killed that day. On cutting into the heart, my knife came in contact with a bone. I was surprised at the circumstance, and, after cutting the bone out, I remarked to the Lyceum that the heart of that animal had evidently been diseased, as a portion of it was ossified. I noticed that the bone was in the upper portion of the septum between the orifices of the aorta and pulmonary artery. The bone was about two inches in length, and three quarters of an inch in width, bifurcated at one end.

A few days afterwards, I was in the neighbourhood of a butchering establishment in the Northern Liberties, and thought I would call and see if they had any hearts in their slaughter-houses. I found two hearts there, and requested permission to examine them, which was readily granted. I desired to ascertain whether the bone in the heart before referred to was a morbid or natural production. On cutting into the septum, the knife immediately came in contact with a bone. I dissected it out, and found it was about one and three-quarters of an inch in length, by five-eighths of an inch in width. It was not bifurcated as the former bone was. On examining the other heart, I found a much larger bone, bifurcated as the first one was. I inquired of the butchers the ages of the two animals from which these hearts were taken, and found the one from which the smaller bone was extracted to be four years of age, and the other eight or ten. From this, I concluded that the size of the bone depended upon the age of the animal.

I pursued my investigations upon the subject for several weeks, until I was

satisfied that the bone was a natural production of the heart of every ox, and that in the calf of a few days old, it exists in the rudimental state of cartilage. After I had obtained about a dozen bones of various sizes, I took them to Professor Horner, to whom the idea of the existence of a bone in the heart of any animal was entirely new; and he very kindly examined several works on comparative anatomy for me, to ascertain whether any mention thereof was made in them, but he found none. He then suggested my publishing an account of it in the *American Journal of Medical Sciences*. I preferred, however, pursuing my investigations still further, in order to ascertain what other animals possessed a bone in the heart, thinking that if it was placed there by nature in consequence of the size of the heart, all animals of equal size with the beef would possess it. I have steadily kept the subject in view since 1836, and have examined the hearts of all animals to which I could have access, but as yet have met with no bone in any of them.

Of the use or utility of this bone I can scarcely give a conjecture. It is no doubt designed to give firmness to this part of the heart. But why animals of this species should require it, while others possessing equally large hearts can do as well without it, I leave for others to decide.

Among the animals, whose hearts were examined by me, was that of a Giraffe. This exceedingly rare opportunity was afforded by the animal, which belonged to a menagerie, dying in Richmond, Indiana, in the year 1842, while I was in that city. The heart was about the same size as that of an ox, but no bone was found in it. The heart of the horse is also about the same size, but contains no bone.

Case of Membranous Laryngitis. By WM. M. KEMP, M.D., of Baltimore.

LAURA T., aged 4 years, after exposure on the afternoon of Thursday, February 14, was observed to be "croupy" towards night, which increased as the hour for retiring approached, and created apprehension for the issue. Her mother has had much experience in the diseases of children, and is remarkably judicious in the selection of remedies for ordinary attacks of infantile ailments. Upon this occasion she exhibited an active antimonial emetic, and procured the full effect of vomiting; internal medicines and external applications of a domestic character were persevered in during the night. On Friday morning the breathing was still very laborious, and the character of the cough remained unchanged. Another antimonial emetic was now administered and urged to the production of full emesis, but it failed to produce any permanent amelioration of the symptoms. Mustard was applied to the surface of the neck and thorax anteriorly, and allowed to produce complete rubefaction; pediluvia of a stimulating character were used, and frequently repeated, and domestic expectorants perseveringly administered. A very slight abatement of symptoms appeared to ensue, but their former severity having returned in a very little time, another emetic was administered at night, and the various auxiliaries already in use were vigorously applied throughout the night.

On Saturday morning the phenomena of disease still presented unabated activity, and the failing energies of the child seemed to foreshadow the approach of death. Another emetic was exhibited, but it failed to act freely, and made no impression upon the symptoms. A most untiring use of remedies was persisted in during the day, but the evening afforded unmistakable proof that the labour of the day had been utterly fruitless.

The peril of the child evidently increased with the lapse of every hour,

and no abatement of disease having been secured by the unremitting administrations of the mother, led to our summons to the case.

Saturday, February 16, P. M.—Found the child in bed with exceedingly oppressed respiration; short, frequent cough, yielding not a particle of mucus. Face somewhat suffused, and in expression exhibiting the very features of intense distress. Abdomen somewhat distended with flatus. Temperature of surface not remarkably elevated. Child dull, and indisposed to be interested in surrounding circumstances. Prescribed a blister longitudinally to the neck throughout its entire front extent. Laxative enema for bowels. R. Nitrat. potass. \mathfrak{z} ss; antim. sulph. præcip. gr. vi. M.—F. pulv. vi. One every two hours in syrup, adding two grains of proto-chlorid. hydrargyri to every alternate dose.

Sunday 17th, 9 A. M.—Child no better. Bowels moved several times. Vesication very satisfactory. Cough dry and very distressing. Child dull and listless. Continue powders.

4 P. M.—No improvement. Suspend powders, and give forty-five grains of pulverized alum every thirty minutes until free puking is induced.

7 P. M.—Has taken three powders of alum. Emesis somewhat copious, but consisted only of gastric substances; no apparent secretion expelled from the respiratory tube. No distinct improvement or alteration in local or general phenomena. Directed the resumption of the powders, as before the use of the alum. The pressing necessities of the case plainly demanded the introduction of some expedient not as yet employed in its treatment, and the consideration of a resort to the opening of the air tube was becoming a matter of momentarily increasing importance.

As yet no application had been made to the mucous membrane of the larynx, or even to the neighbourhood of the glottis. The age of the child, and her inability to understand the manner of gargling the throat, had made it appear unadvisable to entertain any expectation of benefit in their recommendation. This difficulty, however, did not exist in respect to the local use of means by the help of sponge and whalebone.

As a dernier resort, short of tracheotomy, the nitrate of silver had claims to a favourable consideration, and its use was determined upon. A solution of the crystals of nitrate of silver in distilled water (\mathfrak{z} ss to \mathfrak{z} j) was applied to the fauces, by means of a sponge firmly adjusted to a curved whalebone. The sponge was applied freely to the cavity of the fauces, and being directed particularly behind the epiglottis was made to impinge, as much as possible, upon the rima of the glottis. A distressing sense of suffocation ensued, and in a little while after the first approach to sound was observed in the cough.

Monday 18th, 9 A. M.—Condition nearly as yesterday evening. The mother informs me that, at several different times during the night, the cough gave the indication of slight moisture having been secreted. The nitrate of silver solution was again used in the same manner, and as extensively as on the last evening. Directed the continuance of the powders.

3 P. M.—Cough slightly more moist, less frequent, and not quite so distressing. Sense of suffocation less urgent. The nitrate of silver was again used.

9 P. M.—Cough sensibly more moist. Respiration less labouring and oppressed. The nitrate of silver was again used. This application provoked vomiting, and during the puking some bronchial mucus was expelled. In this mucus, several shreds, as of coagulated lymph, were distinctly visible. Whether they were portions of adventitious membrane, or merely the effect of the coagulating property of the nitrate, was not determined. Directed the omission of the proto-chlorid. from the powders in use.

Tuesday 19th, A. M.—Child better. Cough looser and attended by some expectoration. The patient is more cheerful and observant of surrounding things. Manifests great apprehension at the proposal for using the sponge, but was induced to yield, and the nitrate of silver was used again. Continue powders without proto-chlor.

P. M.—Some improvement since morning. Repeat the application of nitrate of silver solution. Continue powders.

Wednesday 20th.—Solution of nitrate of silver used this morning. Directed the omission of the powders, and prescribed an expectorant syrup as a substitute.

Thursday 21st.—Solution used this morning. Syrup continued. Child comfortable. The cough is still somewhat harassing, but can be easily endured.

From this date the solution of nitrate of silver was omitted. The syrup was continued, and under its use, the hoarseness, which gradually declined for three or four days, yielded, as the secretion and expectoration became more abundant.

Although there are general principles plainly pointing to the employment of antimonials and the compounds containing antimony, yet there is some want of precision in determining the peculiar conditions or phases of disease, which afford the indications for the employment of particular combinations in preference to others.

It is generally conceded that, in almost every form of phlegmasial disease, the state of the local morbid action is associated with such a condition of vital force as to render the constitutional effect of antimony eminently beneficial in their reduction. But it is undoubtedly true that in these general states the same effect is not produced by each of the forms in which this agent may be administered. In inflammations of the serous, fibrous, and parenchymatous structures, for example, it is not a matter of indifference with the physician which of the preparations of antimony he shall elect to be employed. In these instances a decided sedative to vascular action is demanded, and experience asserts that antimony, in the form of potassio-tartrate, has secured for itself the highest claims to confidence.

Taking these as the forms demonstrating the existence of grave local derangements in association with a highly exalted state of the constitutional forces, we shall find, in reviewing the catalogue of phlegmasiæ, that the relative intensity of local and general phenomena will bear, in the different diseases in question, every conceivable grade of proportion to each other. In connection with this fact, another, based upon it, will become, in experiment, equally palpable, that to meet the peculiarities of these several states, it is indispensable that some abatement or modification of action be secured in the administration of this agent.

The case narrated is one in which an inflammatory disease is marked chiefly by the serious and fatal character of the lesions which exist locally; they do not, in very many instances, become associated with those great constitutional modifications which form so prominent a part of the phenomena of other inflammatory diseases, and it appears, in this aspect, to require some peculiar modification of remedial impression. Being a disease essentially of the capillary structure of the part, having its display of phenomena limited almost entirely to interruption of the physiological functions of these organs and the formation of abnormal products, there appeared to be a demand for the employment of those combinations which exert an especial influence on the extreme vessels in the repression of excited action, and in the control immediately of their secretory powers.

The particular preparation of antimony used in this case was selected on

account of its known action upon secreting capillaries, and it was deemed more likely to accomplish beneficial results than the stronger antimonials would have done.

The object of this communication is, however, to present this case as an additional fact, in reference to the legitimate results of the application of nitrate of silver to the mucous membrane under such circumstances. The good part it displayed in effecting the reduction of the disease is very apparent, and must, in some degree, strengthen confidence in the powers of the agent as detailed in published papers.

American Medical Society in Paris.—We take pleasure in giving insertion to the following letter, and assure our brethren in Paris that they have our best wishes for their success, and that we will cheerfully lend any aid in our power to promote it.

No. 5 RUE SAINT GERMAIN DES PRÉS, PARIS, April 2, 1852.

ISAAC HAYS, M.D., *Editor of Amer. Journ. Med. Sciences, Philad'a.*

SIR: Several American physicians in Paris, having formed an association under the title of "The American Medical Society in Paris," and adopted a constitution, a copy of which is sent you at the same time with this circular, they would be gratified in having their efforts noticed and seconded by the press in the United States.

A chief object of the society being to establish, with a due regard to economy, a library and reading-room intended to contain medical books and periodicals, as well as miscellaneous works and newspapers, the corresponding secretary has been instructed to ask the favour of the transmission of your journal, free of all cost to the society, except that of postage.

It is proper to acquaint you, in case you are willing to award this favour, that an arrangement has been made with Mr. Edward Bossange, shipping and commission merchant, of No. one hundred and thirty-four (134) Pearl Street, New York, who will receive all letters, periodicals, newspapers, pamphlets, and books designed for the society, pay the postage or freight upon them, and forward them to his father, Mr. Hector Bossange, of No. 25, Quai Voltaire, Paris. These gentlemen have generously offered to act as the society's agents, without any pecuniary consideration.

Respectfully yours,

E. E. WILSON. *Cor. Sec'y.*

DOMESTIC SUMMARY.

Ununited Fracture successfully treated by subcutaneous perforation of the Bone.—Prof. D. BRAINARD records (*N. W. Med. & Surg. Journ.*, March, 1852,) the following interesting case:—

A. B., aet. 26 years, received June 10, 1850, a simple fracture from being carried by a belt around a shaft. It was dressed by Dr. Hawley, of Yorkville, Mich., two splints being properly applied. The dressing was changed perhaps once a week for eight weeks, when the ulna was found to be united but the radius was not. A simple bandage was placed about it for four weeks, when he consulted Dr. White, of Kalamazoo, who put on carved splints for a month, when finding no sign of union, he put through a skein of silk for a seton, which was allowed to remain three weeks. It caused much pain and suppuration. When the seton was taken out, a bandage was put about it for a week, when splints were applied and continued five weeks. They were then taken off and no union found to have taken place. Such was the account given by the patient himself.

Feb. 4, 1851. Ununited fracture of the radius found above one-third of the distance from the wrist to the elbow, partially overlapped, oblique, movable, and the hand of little use.

Operation.—Having provided several *brad awls*, such as are used by shoemakers, and had them well tempered and tried on dry bones, I carried one of them through the skin opposite the fracture, and by movements of partial rotation perforated both fragments where they overlapped. The awl being then withdrawn from the bone (but not from the skin), was directed obliquely upward, then obliquely downwards, so as to make three perforations. It was then entirely withdrawn, and collodium put upon the puncture of the skin. The member was dressed with immovable apparatus. Some tenderness was the effect.

Feb. 17. The tenderness having subsided, I removed the bandage, repeated the operation in the same manner, choosing a different point of puncture and reapplied the dressing.

March 11. Repeated the operation again and dressed as before, mobility scarcely perceptible.

March 21. Dressings removed, union perfect.

The dressings were in this case continued on near seven weeks, but it is probable the last perforation and dressing might well have been omitted.

The occurrence of union in so short a time where the seton had failed and with no operation which interfered with the comfort or amusement of the patient, was a most favourable result, but not different from what was anticipated. I do not know that this subcutaneous perforation had been used by any one.

Case of Enlargement of one of the Ethmoidal Cells resembling Exostosis of the Orbit.—Prof. BRAINARD of Rush Medical College, relates (*N. W. Med. Surg. Journ.*, March, 1852) the following curious case:—

May 3, 1851. Murphy, a robust young man from Bureau Co., Ills., aged about 20 years, applied to me on account of a tumour in the orbit, causing a protrusion of the right eye. The globe of the eye was pressed forwards so that the lids could be closed with difficulty, and outward so as to come firmly in contact with the external margin of the orbit. At the internal canthus was felt a hard bony tumour extending from the side of the nose outward three-fourths of an inch. It was about two inches in length and curved to conform to the shape of the orbit.

It was first perceived about three years previously, had steadily increased in size, and been unattended by pain, or any discharge from the nostril. Movements and function of the eye perfect. As it was on the point of destroying the usefulness of the eye, and had already produced great deformity, I determined to attempt its removal.

Being prepared with suitable instruments for removing an exostosis, I raised the integuments by a semi-lunar incision, and was proceeding to denude it when, carrying the knife with force against the external side it penetrated a bony shell and revealed its contents, which were of thick, yellow mucus, like the inspissated mucus of the nostril. The bone scissors and gouge were then employed to remove the anterior wall, when a cavity of the size of a hen's egg was revealed. It extended behind the root of the nose to the inner side of the left orbit backwards about two inches, was filled with tenacious yellow mucus without odour, and lined with fine polished mucous membrane perfectly healthy. Next the globe of the eye the wall was very thin.

A free opening was made into the nostril at the lower part of the cavity, and a tent inserted, to be withdrawn when desired, by the nostril, and the wound closed with stitches.

On examining the contents and finding it inspissated mucus, the nature of the case became obvious; it was an enlarged ethmoidal cell, distended to its present size by the secretion of mucus prevented from escaping by the closure of its orifice. How long it had existed before being detected it is impossible to say, it is not unlikely it may have been congenital. It is obvious that an early opening from the nostril would have arrested its growth, but its true nature had not been suspected by any one who had examined it, and I am not aware that a similar case has been noticed before.

The external wound healed in a week, and the patient returned home perfectly cured with the exception of a derangement of the lachrymal apparatus, which allowed the tears to flow over the cheek.

Ligation of the Primitive Iliac Artery. By Dr. A. J. WEDDERBURN.—An Irishman, enjoying general good health, aged about 25 years, was admitted into the Charity Hospital some time in the month of March, 1852. On examination, a large aneurism was detected in the left femoral artery, situated in the groin, extending both below and above Poupart's ligament. The tumor was five or six inches in length, and presented the usual characteristics of an aneurism. Externally, there was no discoloration of the tissues or integuments; it was represented as quite painful to the touch, and the patient was compelled, to find relief from constant suffering, to flex his thigh upon the pelvis, and the leg upon the thigh. In this position he was comparatively easy.

About three months previously, he first discovered the tumor, which made its appearance without any known cause, and rapidly grew until it reached the size above described.

On the 27th March, Dr. WEDDERBURN proceeded to operate as follows:—

An incision was made, commencing at the upper border of the tumor, some four or five inches above Poupart's ligament, extending, in a slight curve, to near the anterior superior spinous process of the ilium of the same side. In dividing the integuments, muscles, etc., severe hemorrhage took place; it was not, however, serious, and soon the operator reached the cavity and also the tumor, which was found much larger than was expected, and extended to within one or two inches of the bifurcation of the primitive iliac artery. Not anticipating this state of things, and having cut with a view to reach only the external iliac, Dr. Wedderburn, after a few moments' delay, succeeded in reaching the primitive iliac, and cast a ligature around it, and secured it. Instantly the pulsation in the tumor ceased; when the wound was brought together by a few sticking plasters, etc. An anodyne was administered, and the patient transferred to his bed.

No chloroform was administered in this case, and the patient complained much during the operation.

On Monday, the 29th, and the second day after the operation, the patient's countenance indicated much constitutional irritation; his pulse was about 120, quite quick; his skin warm, but moist; complete loss of sensation in the whole limb, which was warm as low down as the knee, below which point the leg was cold, and dotted with bluish, livid spots, which did not disappear on pressure. In a word, the entire leg was gangrenous; and on the 31st March the gangrene had extended up to the hip; the pulse was feeble and rapid, the skin cold, and the countenance haggard.

About 2 P. M. of the same day the patient died, and on the morning of the 1st April, twenty hours after death, Dr. Wedderburn made an examination of the parts. The ligature had been applied, as already stated, on the *common* iliac, just above the bifurcation; the aneurismal tumor extended to within an inch and a half of the division, about which space the tissues were thickened and degenerated, and the lymphatics enlarged. Besides this, nothing else of a special nature was observed.—*New Orleans Med. and Surg. Journ.*, May, 1852.

Results of Treatment in Thirteen Cases of Pseudarthrosis.—In the *New York Times* for October, Dr. WATSON has reported thirteen cases of pseudarthrosis, which have been treated in the New York Hospital since 1839. The following is his summary of them: "Of these cases, some were under the care of my colleagues, and some, either wholly or part of the time, under my own charge. Among my own cases, I was in one instance obliged to resort to amputation. I have in no instance, as yet, applied either the seton or the wire.

"Of the whole number of cases of which I have any memoranda, one was in the humerus, two in the forearm, two in the os femoris, and eight in the bones of the leg; seven underwent operations, and six got well by other means. Of the seven that were subjected to operations, one underwent amputation and recovered; three had setons passed through the ends, all of which were also reported to have been cured; three submitted to excision, drilling, and the wire ligature; of these latter, one died, one recovered with the wire permanently imbedded in the bone, from which it could not be extracted, and the third, now six months after the operation, is still uncured. In the fatal case, as well as

in the case subjected to amputation, the false joint was seated below the knee. In those that recovered after wiring, it was in the forearm; and in the cases treated by the seton, the humerus in one, the femur in another, and the tibia in another, was the seat of accident. In the cases that got well independent of operation, the false joint was, with the exception of one, situated in the bones of the leg.

Removal of a Pessary which had remained 41 years in the Vagina.—Dr. HURTHAL relates (*Ohio Med. & Surg. Journ.*, May, 1852,) the case of a German woman, 73 years of age, from whose vagina he removed a pessary, where it had remained 41 years. The instrument was a circular ring of dense wood, nearly three-fourths of an inch thick. It had originally been covered with beeswax, but when removed presented the appearance of a roughened stone, in some parts over an inch thick.

Creosote in Cholera Morbus, Cholera Infantum, &c.—Dr. D. J. CAIN states (*Charleston Med. Journ.*, Feb., 1852) that in his hands “creosote has succeeded in the ordinary diarrhoea (watery gripes) of adults and children, more frequently than the class of astringents, both mineral and vegetable. But it is in the two diseases mentioned above—and I lay stress upon the fact—that its greatest triumph is exhibited. Every one must be aware of the difficulty experienced in allaying the irritation of stomach, and checking the nausea and vomiting, which so rapidly prostrate the strength of the patient and place his life in jeopardy. Creosote admirably fulfils this indication, checking simultaneously the vomiting and purging, and thereby placing the patient in a favourable condition for receiving other remedies, such as calomel, etc.* Did I deem it necessary, I could adduce, in support of what I here state, a number of cases, of both diseases.

“During the epidemic yellow fever of this city, in 1849, I administered it, both internally and topically, when there was hemorrhage from the buccal cavity, bowels, uterus, etc., and it seemed to me to exert, in many cases, a good effect in both ways. Turpentine, however, possessing a higher styptic property, is more valuable in such cases, as well as in purpura hemorrhagica.

“Its employment, in two cases of *flatulent colic*, has given me great satisfaction. Indeed, I frequently prescribe it in ordinary cases of flatulence, in which aromatics are generally used, and I prefer its action to that of the latter class. It appears to expel the flatus, and prevent its further evolution, by correcting the fermentative process going on in the stomach or intestines.

“In the declining stage of dysentery, when there is much disengagement of flatus from the depraved state of the secretions of the intestinal canal, I prescribe it with a view to its antiseptic effect. In short, I have found it serviceable in all cases of derangement of the secretions of the stomach and bowels, when there exists no phlegmasial state of these organs.

“For the relief of diarrhoea, flatulent colic, and other cases demanding a correction of the secretions of the digestive tube, I generally combine with it charcoal and creta ppt., or bicarb. soda. The charcoal I regard as a valuable adjuvant to the creosote. It results from the experiments of Dr. Garrod, that charcoal possesses the property of separating acrid matters from their solutions, which antiseptic virtue peculiarly fits it for depriving the discharges in all these diseases, but especially in dysentery, of their irritating character—an important object, in my opinion, in the treatment of the latter disease. In this affection, however, I combine it with the cremor tartar or a neutral salt.

“With the creosote, charcoal, etc., I associate a preparation of opium or of camphor, or both, when the pain is severe. It is not necessary to combine the opiate with the creosote, unless the pain is *very* severe, because the action of

* In the summer of 1848, during the prevalence of epidemic diarrhoea in this city, I was called to see two patients—the one an adult male, labouring under cholera morbus, the other a child, with cholera infantum, both of whom were in the stage of collapse when I saw them. The creosote exerted a very happy effect, in both cases, and warmth was soon restored by the ordinary means.

the latter is exceedingly mild, relieving effectually pain of ordinary intensity, apparently soothing, yet leaving no constipated state of the bowels, and no rumbling from flatus. In the latter two respects, it enjoys great advantage over the class of astringents."

Creosote in Diarrhœa.—Dr. T. M. WOODSON, of Sumner Co., Tenn., states (*Western Journ. of Med. and Surg.*, April, 1852) that he met, in the *American Journal of Medical Sciences* for July, 1851, with the notice by Kesteven, of the efficacy of creosote in diarrhœa, at a period when that disease was rife, and he determined to try it. This, he says, he did in more than twenty cases, and found it "much more prompt and invariable in its action than any other remedy to which he had ever resorted in this complaint, and, although it is described by writers on materia medica as an irritant and narcotic, he does not hesitate to administer it where fever and dysenteric symptoms are present. It is superior to opiates, in that it does not leave the bowels constipated. It excites no nausea, nor any other unpleasant symptom. Its action seems to be stimulant and antispasmodic, allaying pain very promptly, and imparting to the patient an agreeable sense of warmth in the stomach and bowels. Whether it acts directly as an astringent, or, as suggested by Mr. Kesteven, by coagulating the albuminous fluids of the alimentary canal, Dr. W. does not pretend to decide. But of its efficiency in bowel complaints, he thinks there can be no question, and in such cases it is confidently recommended by him."

Nitric Acid in Whooping-Cough and Asthma.—Dr. F. C. T. ARNOLDI recommends (*Canada Medical Journal*, June, 1852) the nitric acid as a powerful remedy in whooping-cough and asthma.

"In whooping-cough," he says, "at whatever age, whether it be a child at the breast or a full grown adult, I administer nitric acid in solution, as strong as lemon juice, sweetened *ad libitum*. I have given to a child of two years of age as much as one drachm and a half of concentrated nitric acid, in the above manner per diem, and I have never known the disease to resist its use beyond three weeks. In one instance, that of a child at the breast, only seven months old, the disease disappeared within eight days. In another instance of a young lady fifteen years of age, the paroxysms were subdued within the first twenty-four hours, and the disease disappeared within ten days. Again, in the cases of two boys about ten years of age living at a great distance from one another, who had had the cough for several weeks, and to such a violent degree, that both of them had the circumference of their eyes ecchymosed, as though they had been pommelled in pugilistic combats, the acid acted positively like a miracle. A medical *confère* of mine had four of his children severely affected with the same disease in the middle of winter; and, although they had to be kept indoors, owing to the inclemency of the weather, they were nevertheless all perfectly cured within three weeks. I might go on to cite a hundred similar instances, but these, I am satisfied, will prove sufficient to induce the profession to adopt this treatment. As regards asthma, the use of nitric acid has proved not only in my own practice, but in that of others who have adopted it, truly marvellous."

[It will be remembered that Dr. HOPKINS, of Bethel, Georgia, in a communication published in the number of this journal for October, 1850, page 549, extols the powers of nitric acid in asthma, and relates five cases in which he successfully employed it.]

External Use of Cod-Liver Oil.—Dr. A. H. DAVIS recommends (*Canada Medical Journal*, May, 1852) the cod-liver oil as a local application in various cutaneous affections, and states that after a trial of it in such cases for upwards of two years, he has found it to act almost specifically.

In ringworm of the scalp, Dr. D. says he has used it in more than twenty cases with entire success. Some cases, which had resisted other methods of treatment for weeks, were cured in four or five days.

He has also used it in tinea capitis with equal success; and he cured one case of psoriasis inveterata of three years' standing by this application in seven weeks.

Dr. Arnaldi has tried it in extensive burns, and with astonishing advantage, and also in frost bites with advantage; and Dr. David has used it in two cases of erysipelas with benefit.

Extract of Red Clover Blossoms as a Cure for Tetter.—Dr. W. D. DORRIS states (*Nashville Journ. of Med. and Surg.*, May, 1852) that he has used the extract of the blossoms of red clover, for the last five years, with success, in the various forms of tetter, by applying it to the parts affected twice a day, for several days; washing the parts clean before applying it. It will produce a burning sensation; if it burns too severely, apply the unguentum stramonii. If it is on the scalp, after it is cured, Dr. D. encourages the growth and beauty of the hair by sponging it with the following: Take uncoloured whiskey, one quart; best Cologne, one gill. Mix and shake. It is fit for use immediately. This mixture will prevent baldness.

The extract of red clover is made in the following manner: Clip the blossoms when the dew is on them, with a pair of shears, and put them in a brass or copper kettle with a cover over it, add water enough to cook them, strain and then boil the fluid over a slow fire until it is as thick as molasses, then pour it into your jars for safe keeping.

Leucocythæmia.—Prof. G. B. WOOD called the attention of the college to a form of disease described by Dr. Bennett, of Edinburgh, under this name, the leading characteristic of which is an excess of the white corpuscles of the blood. He stated that there was a case of it in the Pennsylvania Hospital. The patient, a male of about seventeen years of age, was admitted labouring under symptoms of anæmia, with some anasarcaous effusion, general debility, and great enlargement of the spleen. The blood was examined by Dr. Adenell Hewson, resident physician of the hospital, who is accustomed to microscopic investigations, and found by him to contain a great excess of white corpuscles. There could be no doubt that it was a case of the leucocythæmia of Dr. Bennett. The patient was put upon the use of iron and quinia, with a good diet. Under this treatment, the dropsical symptoms and enlargement of the spleen rapidly diminished, and the patient soon became restored to a degree of robustness, which was in strong contrast with the debilitated appearance he presented at his entrance into the institution. The spleen was evidently diminished in bulk; but at the same time the liver was found to have become enlarged. On examining the blood under the microscope, it still exhibited the same excess of white corpuscles. Dr. Wood supposed that the patient had been overstimulated by the treatment to which he had been subjected. A less invigorating diet was directed, small doses of blue mass were administered, and a blister was applied over the right hypochondriac region. Under this treatment the condition of the liver became improved; but, as the symptoms of anæmia reappeared, and the spleen began again to enlarge, a blister was applied over the left hypochondrium, and nitro-muriatic acid was substituted for mercury. The visceral disease now rapidly diminished; but as the anæmia continued, recourse was again had to chalybeates. All the symptoms now improved; and an examination of the blood showed a very considerable diminution in the number of white corpuscles. When the patient was last seen by Dr. Wood, the spleen was of nearly its natural dimensions, and the anæmic symptoms had almost disappeared: but the liver still remained somewhat enlarged.—*Quart. Sum. Trans. Coll. Phys. Philad.*, Jan. to April, 1852.

American Medical Association.—The Association held its fifth annual meeting in the city of Richmond, Va., on the 4th, 5th, 6th, and 7th of May.

The meeting was a large one and the proceedings were characterized, as usual, by much harmony and good feeling.

The delegates were treated by their brethren of Richmond with a warm and generous hospitality which even exceeded the reputation of "the ancient dominion" in this respect, and nothing was left undone which the most considerate kindness and best taste could suggest as calculated to render the meeting an agreeable one.

THE
AMERICAN JOURNAL
OF THE MEDICAL SCIENCES
FOR OCTOBER 1852.

CONTRIBUTORS TO THIS VOLUME.

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T. M. WOODSON, M. D., *of Sumner County, Tenn.*
JESSE YOUNG, M. D., *of Chester, Pa.*

TO READERS AND CORRESPONDENTS.

Several communications are on hand, which shall receive early attention.

The following works have been received:—

General Board of Health. Second Report on Quarantine. Yellow Fever. Presented to both Houses of Parliament by command of Her Majesty. London, 1852. (From J. O. McWilliam, M. D.)

Further Observations on that portion of the Second Report on Quarantine by the General Board of Health which relates to the Yellow Fever Epidemy on board H. M. S. *Eclair*, and at Boa Vista in the Cape de Verde Islands. By J. O. McWILLIAM, M. D., F. R. S., R. N., &c. London, 1852. (From the Author.)

On the Treatment of Wounds of the Palmar Arch, and of the Arteries in the Vicinity of the Wrist-Joint. By RICHARD G. H. BUTCHER, Surgeon to Mercers' Hospital, &c. &c. Dublin, 1852.

The Principles and Practice of Surgery. Illustrated by 316 engravings on wood. By W. M. PIRRIE, F. R. S. E., Regius Professor of Surgery in the Mareschal College and University of Aberdeen. Edited, with additions, by JOHN NEILL, M. D., Demonstrator of Anatomy in University of Pennsylvania. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

A Practical Treatise on the Diseases of the Skin. By J. MOORE NELIGAN, M. D., M. R. I. A., &c. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from May 11 to July 6 inclusive, 1852.

Transactions of the Twenty-ninth Annual Meeting of the Medical Society of Virginia, together with the President's Address, and the Constitution of the Society. Richmond, 1852.

Transactions of the Medical Association of the State of Missouri at its Second Annual Meeting, St. Louis, April 19, 20, and 21, 1852. Vol. II. St. Louis, 1852.

Proceedings of the Medical Association of the State of Alabama at its Fifth Annual Meeting, begun and held in the City of Montgomery, December, 8—11, 1852: with an Appendix and List of Members. Mobile, 1852.

Transactions of the Medical Society of the State of Pennsylvania at its Annual Session, held in the City of Philadelphia, May, 1852. Vol. II. Published by the Society. Philadelphia, 1852.

Transactions of the Medical Association of South-Central New York, at the Annual Meeting held at Owego, June, 1852. Auburn, 1852.

Transactions of the Third Annual Meeting of the Medical Society of the State of Georgia, held in the City of Augusta, April, 1852. Penfield, 1852.

Transactions of the Illinois State Medical Society for the year 1852. Peoria, 1852.

Clinical Reports on Continued Fever, based on Analyses of one hundred and sixty-four Cases; with Remarks on the Management of Continued Fever; the Identity of Typhus and Typhoid Fever; Relapsing Fever; Diagnosis, etc. To which is added a Memoir on the Transportation and Diffusion, by Contagion, of Typhoid Fever, as exemplified in the occurrence of the Disease at North Boston, Erie County, N. Y. By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine, and of Clinical Medicine, in the University of Buffalo, &c. Buffalo: Geo. H. Derby & Co., 1852. (From the Publishers.)

Operative Surgery Illustrated: containing more than nineteen hundred engravings, including two hundred original and fifty coloured drawings: with explanatory text. By R. U. PIRER, M. D. Also, a Chapter upon the Use of

Ether in Surgery, from the Trans. Am. Med. Assoc. By H. J. BIGELOW. Boston: Ticknor, Reed, & Fields, 1852.

On the Surgical Treatment of Polypi of the Larynx and Edema of the Glottis. By HORACE GREEN, A. M., M. D., &c. New York: G. P. Putnam, 1852. (From the Author.)

Records of Maculated Typhus, or Ship Fever, with Suggestions of Treatment. Being the Result of a Series of Observations made during the Prevalence of the Disease at South Boston and Deer Island Hospitals in 1847-48. With Plates. By J. B. UPHAM, M. D. New York, 1852. (From the Author.)

Report of the Committee appointed by the City Council; and, also, a Comparative View of the Population of Boston in 1850, with the Births, Marriages, and Deaths in 1849 and 1850. By JESSE CHICKERING, M. D. (From Dr. E. Jarvis.)

Report of the Board of Visitors of the Boston Lunatic Hospital; containing a Statement of the Condition of that Institution, and transmitting the Annual Report of the Superintendent for 1851. (From Dr. E. Jarvis.)

On the Supposed Increase of Insanity. By EDWARD JARVIS, M. D. Dorchester, Mass. (From the Author.)

Twenty-second Report of the Belfast District Asylum for the Insane, for the year ending March 31, 1852. Drawn up by the Resident Physician. Belfast, 1852. (From ROBERT STEWART, Resident Physician.)

An Address read before the Tennessee Medical Society at its Twenty-third Session. By JOHN M. WATSON, M. D., Professor of Midwifery in University of Nashville. Nashville, 1852.

An Address delivered before the Medical Society of Virginia at its Twenty-ninth Annual Meeting, held in Richmond April, 1852. By BEVERLY R. WELFORD, M. D., &c., President of the Society. Published by order of the Society. Richmond, 1852.

Address to the Chester County Medical Society. By WILLIAM DARLINGTON, M. D., President of the Society. West-Chester, Penn., 1852.

The Difficulties and Privileges of the Medical Profession. An Address delivered before the Medical Society of the State of Georgia at their Third Annual Meeting, held at Augusta, April, 1852. By HENRY F. CAMPBELL, M. D., First Vice-President of the Med. Soc. of the State of Georgia, Demonstrator of Anat. in the Med. College of Georgia, &c. Augusta, 1852.

Report of the Medical Department of the University of Pennsylvania for the Session of 1851-52. To the Alumni of the School. Philadelphia, 1852.

Annual Catalogue and Announcement of the Medical Department of the St. Louis University. Session 1852-53.

Annual Circular of the Medical Institution of Yale College for the Lecture Term of 1852-53. New Haven, 1852.

Annual Announcement of Rush Medical College of Chicago, Illinois. Session of 1852-53. Chicago, 1852.

Annual Circular of the National Medical College, Washington, D. C. Washington, 1852.

The following Journals have been received in exchange:—

Annales Médico-Psychologiques. Par BAILLARGER, BRIERRE DE BOISMONT, et CERISE. April and July, 1852.

Vierteljahrsschrift für die praktische Heilkunde. Red: a. o. Prof. Dr. J. HALLA and Dr. J. V. HASNER. Bd. xxxiv and xxxv. 1852.

Medical Times and Gazette. June, July, and August, 1852.

Dublin Medical Press. June, July, and August, 1852.

Dublin Quarterly Journal of Medical Science. August, 1852.

Provincial Medical and Surgical Journal. Joint-Editors, W. H. RANKING, M. D., Norwich, and J. H. WALSH, Esq., Worcester. June, July, and August, 1852.

The British and Foreign Medico-Chirurgical Review. July, 1852.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. July, 1852.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. RANKING, M. D., Cantab. Jan.—June, 1852.

Monthly Journal of Medical Science. Edited by Professors CHRISTISON, SYME, SIMPSON, and BENNETT, and Drs. MACLAGAN and ROBERTSON. July, August, 1852.

London Journal of Medicine. July, August, September, 1852.

The Upper Canada Journal of Medical, Surgical, and Physical Science. April, 1852.

[This is the only No. of this Journal which we have received.]

Canada Medical Journal. Edited by R. L. MACDONNELL, M. D., and A. H. DAVID, M. D. July, August, September, 1852.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by WM. PROCTER, JR., Professor of Pharmacy in Philad. Coll. of Pharm., &c. July, 1852.

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by JOSEPH PARRISH, M. D. July, August, September, 1852.

The North-Western Medical and Surgical Journal. Edited by W. B. HERICK, M. D., and H. A. JOHNSON, M. D. June, July, August, 1852.

L'Union Médicale de la Louisiane. Editeurs-Redacteurs, CHARLES DELERY, D. M. P., et EDWARD MARTIN, D. M. P. Nos. 6 and 8.

The New Hampshire Journal of Medicine and Surgery. Edited by EDWARD H. PARKER, M. D. July, August, 1852.

The New Orleans Medical and Surgical Journal. A. HESTER, M. D., Editor. July, September, 1852.

The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica. July, 1852.

Buffalo Medical Journal. Edited by AUSTIN FLINT, M. D. July, August, September, 1852.

The Ohio Medical and Surgical Journal. Edited by RICHARD L. HOWARD, M. D. July, September, 1852.

The American Journal of Science and the Arts. Conducted by Professors B. SILLIMAN, B. SILLIMAN, JR., and JAMES D. DANA; and, in the Departments of Chemistry and Physics, by Dr. WOLCOTT GIBBS. July, September, 1852.

Boston Medical and Surgical Journal. Edited by J. V. C. SMITH, M. D. July, August, September, 1852.

New York Medical Times. J. G. ADAMS, Editor and Proprietor. July, August, September, 1852.

The Transylvania Medical Journal. Edited by E. L. DUDLEY, M. D. July, 1852.

The New Orleans Monthly Medical Register. Edited by A. F. AXSON, M. D. July, August, September, 1852.

The Western Medico-Chirurgical Journal. Edited by J. F. SANFORD, M. D. July, August, September, 1852.

The Charleston Medical Journal and Review. Edited and Published by D. J. CAIN, M. D., and F. PEYRE PORCHER, M. D. July, September, 1852.

Nashville Journal of Medicine and Surgery. Edited by W. K. BOWLING, M. D., and P. F. EVE, M. D. July, August, September, 1852.

The Western Lancet. Edited by L. M. LAWSON, M. D., and GEO. MENDENHALL, M. D. July, August, September, 1852.

Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M. D., and T. S. BELL, M. D. July, August, September, 1852.

St. Louis Medical and Surgical Journal. Edited by Drs. LINTON, MOORE, MCPHEETERS, and JOHNSON. July, September, 1852.

The Stethoscope. Edited by P. C. GOOCH, M. D. July, August, September, 1852.

The New York Medical Gazette. Edited by D. M. REESE, M. D. July, August, September, 1852.

The Medical Examiner. Edited by F. G. SMITH, M. D., and J. B. BIDDLE, M. D. July, August, September, 1852.

The New York Journal of Medicine. Edited by S. S. PURPLE, M. D. July, 1852.

Southern Medical and Surgical Journal. Edited by L. A. DUGAS. January, March, April, May, June, July, August, September, 1852.

The American Journal of Dental Science. Edited by CHAPIN A. HARRIS, M. D., D. D. S., and ALFRED A. BLANEY, M. D., D. D. S. July, 1852.

The East Tennessee Record of Medicine and Surgery. Edited by FRANK A. RAMSAY, A. M., M. D. August, 1852.

The Medical Recorder. Published monthly by the Memphis Medical College. September, 1852.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London*; or to John Wiley or G. P. Putnam, *New York*; or W. D. Ticknor, *Boston*; or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

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THE
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ART. I.—*Statistics of Fractures and Dislocations treated in the Pennsylvania Hospital, during the ten years from 1840 to 1849 inclusive.* By GEORGE W. NORRIS, M. D., one of the Surgeons to the Institution.

IN the first volume of the New Series of this Journal (April 1841), I published a statistical account of the fractures and dislocations treated in the Pennsylvania Hospital, from 1830 to 1839 inclusive, with the view of showing the relative frequency of, and the results obtained there, in these important classes of injuries, prefacing them with a short account of the plan of treatment generally adopted. The object of the present communication is to continue these statistics, by giving the numbers and results of those treated in the ten years ending in 1849.

In the present, as in the foregoing tables, no separate head is retained for compound fractures* except those of the thigh; the entries having been so made in the books of the hospital, that it was impossible when these tables were begun, in all cases accurately to ascertain whether the patient was admitted for simple or compound fracture; and for the same reason, under the heads of fracture of the arm and fracture of the leg, are included respectively those of the forearm, either of one or both bones, as well as of the humerus, and of one or both bones of the leg. No record of the period required for the union of the different fractures treated, has been kept. In all cases, except a very few where our patients request a discharge, it is the custom of the house to retain them for a considerable time after union—until the stiffness and debility resulting from their injuries and confinement has been so far removed as to enable the patients shortly afterwards to resume their employments.

* The results of treatment in compound fractures of the leg and thigh, from 1839, are given in a separate paper appended to the present.

1840.	No.	Cured.	Relieved or removed by friends.	Died.	1844.	No.	Cured.	Relieved or removed by friends.	Died.
Fractured thigh	15	9		6	Fractured thigh	18	15	1	2
" leg	27	23		4	" leg	32	26	1	5
" cranium	2	1		1	" patella	12	12		
" ribs	2	1	1		" cranium	5			5
" clavicle	15	13	12		" spine	3			3
" arm	17	16	1		" ribs	4	4		
" fingers	3	3			" jaw	5	3	1	1
" scapula	1	1			" clavicle	6	5	1	
" pelvis	1			1	" arm	31	26	3	2
" spine	2	1		1	" hand and fingers	9	9		
Ununited fracture	1		1		" toes and foot	6	3	1	2
Total	86	68	5	13	" scapula	3	3		
					" pelvis	1			1
					" nose	2	2		
					" astragalus	1	1		
					Compound fracture of thigh	4	1		3
					Total	132	100	8	24
1841.					1845.				
Fractured thigh	8	7	1		Fractured thigh	7	6		1
" leg	25	19	3	6	" leg	31	26	1	4
" patella	2	2			" patella	3	2	1	
" cranium	1			1	" cranium	6		1	5
" ribs	3	2		1	" spine	2		2	
" clavicle	13	11	2		" ribs	5	5		
" arm	15	16	2		" jaw	4	1	3	
" fingers	2	2			" clavicle	12	12		
Fracture	1	1			" arm	36	31	3	2
Compound fracture of thigh	1			1	" foot and toes	4	2		2
Total	77	60	8	9	" scapula	1		1	
					" nose	1	1		
					Compound fracture of knee	1			
					Total	113	87	12	14
1842.					1846.				
Fractured thigh	9	9			Fractured thigh	15	14		1
" leg	24	19		5	" leg	41	36	3	8
" cranium	2	1	1		" patella	3	3		
" spine	1			1	" cranium	7	2		5
" ribs	3	3			" spine	4			4
" jaw	1		1		" ribs	3	3		
" clavicle	9	9			" jaw	4	3		
" arm	26	25	1		" clavicle	8	6	2	
" hand and fingers	5	4	1		" arm	31	27	3	1
" foot and toes	2	1	1		" hand and fingers	7	5	2	
" pelvis	1	1			" foot and toes	4	3	1	
" nose	1		1		" scapula	2	2		
Ununited fracture	1		1		" nose	3	1	2	
Compound fracture of thigh	1	1			Compound fracture of thigh	3	1		2
Total	86	73	7	6	Ununited fracture	1		1	
					Total	135	100	15	21
1843.					1847.				
Fractured thigh	13	12		1	Fractured thigh	22	21		1
" leg	16	12		4	" leg	44	33	4	7
" patella	4	4			" patella	4	4		
" cranium	4		2	2	" cranium	4	2		2
" spine	2			2	" ribs	5	3	1	1
" ribs	6	4	1	1	" jaw	4	3		1
" jaw	2	2			" clavicle	8	8		
" clavicle	9	5	4		" arm	32	28	2	2
" arm	32	27	4	1	" fingers and hand	8	8		
" hand and fingers	2	1	1		" foot and toes	4	2	1	1
" scapula	1		1		" pelvis	2	1		1
" foot and toes	2	1	1		" sternum	1	3	1	1
" nose	2	1	1		" nose and face	5	3		
Compound fracture of thigh	1			1	" scapula	3	1	2	
Total	95	69	15	12	Total	146	117	12	17

1848.	No.	Cured.	Relieved or removed by friends.	Died.	1849.	No.	Cured.	Relieved or removed by friends.	Died.
Fractured thigh	19	16	2	1	Fractured thigh	22	16	2	4
“ leg	35	32	1	2	“ leg	40	39	5	6
“ patella	4	4			“ patella	4	3		1
“ cranium	9	4	3	2	“ cranium	24	8	2	14
“ spine	1			1	“ spine	2	1	1	1
“ ribs	4	3	1		“ ribs	7	5	2	
“ jaw	6	4	2		“ jaw	6	5	1	
“ clavicle	7	5	2		“ clavicle	17	16		1
“ arm	42	39	2	1	“ arm	64	55	5	4
“ hand and fingers	13	12	1		“ hand and fingers	11	9	1	1
“ foot and toes	12	8	1	3	“ foot and toes	4	4		
“ scapula	4	4			“ scapula	3	2		1
“ pelvis	2	1		1	“ pelvis	1	1		
“ nose and face	3	2	1		“ nose and face	3	3		
Compound fracture of thigh	1				Compound fracture of thigh	4	1		3
Ununited fracture	2	2			“ “ os calcis	1	1		
Total	164	136	16	12	Total	213	158	19	36

General Summary of the Fractures treated during ten years.

Years.	Whole number.	Cured.	Relieved or removed by friends.	Died.
1840	86	68	5	13
1841	77	60	8	9
1842	86	73	7	6
1843	96	69	15	12
1844	132	100	8	24
1845	113	87	12	14
1846	136	100	15	21
1847	146	117	12	17
1848	164	136	16	12
1849	213	158	19	36
Total	1249	968	117	164

The Relative Frequency of Fractures will be seen in the following Table:—

	Number.	Cured.	Relieved or removed by friends.	Died.
Fractured thigh	148	125	8	15
“ leg	318	249	18	51
“ cranium	64	18	9	37
“ patella	26	24	1	1
“ spine	17	1	3	13
“ sternum	1		1	
“ clavicle	104	90	13	1
“ arm	329	290	26	13
“ hand and fingers	60	53	6	1
“ feet and toes	38	24	6	8
“ scapula	18	13	4	1
“ nose and face	20	13	4	3
“ jaw	32	21	9	2
“ pelvis	8	4		4
“ ribs	42	33	6	3
“ astragalus	1	1		
“ fracture	1	1		
Compound fracture of knee	1	1		
“ “ thigh	15	4		11
Ununited fracture	5	2	3	
Fracture of os calcis	1	1		
Total	1249	968	117	164

Table of the Dislocations treated during ten years.

1840.	No.	Cured.	Relieved or removed by friends.	Died.	1845.	No.	Cured.	Relieved or removed by friends.	Died.
Dislocated shoulder	6	5	1		Dislocated shoulder	4	4		
" elbow	1	1			" semilunar cartilage	1	1		
Comp. dislocated finger	1	1			" elbow	1	1		
Total	8	7	1		Total	6	6		
1841.					1846.				
Dislocated shoulder	2	2			Dislocated shoulder	6	6		
					" hip	1	1		
					" clavicle	1	1		
					" elbow	1	1		
					" head of radius	1	1		
					" astragalus	1	1		
					Total	11	11		
1842.					1847.				
Dislocated shoulder	4	4			Dislocated shoulder	6	6		
" elbow	1	1			" elbow	1	1		
" thumb	1	1			" clavicle	2	1	1	
" clavicle	1	1			Comp. dislocation of thumb	1	1		
Incomp. of knee	1	1			Total	10	9	1	
Total	8	8			1848.				
1843.					Dislocated shoulder	10	10		
Dislocated shoulder	3	3			" clavicle	1	1		
" hip	1	1			" radius	1	1		
" elbow	1	1			Total	12	12		
Total	5	5			1849.				
1844.					Dislocated shoulder	5	5		
Dislocated shoulder	6	6			" hip	1	1		
" hip	1	1			" elbow	2	2		
" clavicle	1	1			" clavicle	3	1	2	
" elbow	1	1			Comp. dislocation of thumb	1	1	1	
Comp. dislocated astragalus	1			1	Total	12	9	3	
Total	10	9		1					

General Summary of the Dislocations treated during ten years.

	Number.	Cured.	Relieved or removed by friends.	Died.
Dislocated shoulder	52	51	1	
" hip	4	4		
" astragalus	2	1		1
" elbow	9	9		
" clavicle	9	6	3	
" radius	2	2		
Compound dislocation of fingers	1	1		
" " thumb	3	2	1	
Incomp. of knee	1	1		
Dislocation of semilunar cartilage	1	1		
Total	84	78	5	1

Of the 52 cases of dislocated shoulders which occurred during the ten years, 51 were cured, and one left the house without benefit. Of the 52

cases, 39 are noted as having been dislocations downwards into the axilla; in 10 the head of the bone was found forwards under the clavicle; and in 3 the direction of the displacement was not noted.

Among these dislocations, was 1 which had been out ten weeks, 1 four weeks and six days, 1 forty-eight days, 1 thirty-one days, 2 twenty-nine days, 1 ten days, and 1 four days. One of the recent dislocations was accompanied by a compound fracture of the elbow of the same side, of so severe a character that amputation in the middle of the arm was performed, the luxation being reduced previous to the operation.

Of the 9 dislocations of the clavicle, 4 were injuries in which the sternal end of that bone was thrown forwards, and in the 5 other cases the acromial end was displaced upwards.

But 4 dislocations of the hip were admitted during the ten years. All of these were brought to the Institution within twenty-four hours after their occurrence; two were into the ischiatic notch, one was into the foramen ovale, and one was a displacement upwards and backwards upon the ilium. They were all reduced.

Appended to the surgical report presented to the American Medical Association at their annual meeting, held in the city of Charleston, and published in the fourth volume of their *Transactions*, is an interesting table of the cases of all the compound fractures of the leg and thigh treated at the New York Hospital, from January 1, 1839, to April 1, 1851. The following table, embracing the same period of time, I have drawn from the records of the Pennsylvania Hospital. Unfortunately, these give no information on many particulars which it would be desirable for statistical purposes to ascertain; yet as far as they go, they are believed to be accurate, and afford sufficient data for comparison with the New York cases, and like them, show strikingly the great mortality attendant upon this class of accidents.

Statistical Table of all the Compound Fractures of the Leg and Thigh treated at the Pennsylvania Hospital, from January 1, 1839, to April 1, 1851.

By GEORGE W. NORRIS, M. D., Surgeon to the Hospital.

No.	Admission.	Age.	Leg or thigh.	Result.	Date of discharge.
	1839.				1839.
1	January 6	8	Leg	Died	January 6.
2	do. 15	35	do.	Cured	April 30.
3	do. 15	14	do.	do.	March 29.
4	February 2	32	do.	Died	February 3.
5	do. 9	45	Thigh	do.	do. 11.
6	March 2	40	Leg	Cured	June 29.
7	April 7	16	Thigh	Died	April 18.
8	May 6	15	do.	Cured	November 9.
9	do. 20	7	do.	do.	Removed by parents a few days after accident, but did well.
10	June 22	39	Leg	Died	July 12.

No.	Admission.	Age.	Leg or thigh.	Result.	Date of discharge.
11	July 30	40	Leg	Cured	October 5.
12	November 11	12	Thigh	do.	April 29, 1840.
	1840.				1840.
13	March 24	33	Leg	do.	October 10.
14	May 12	24	Legs	Died	May 13.
15	July 4	25	Leg	do.	August 28.
16	August 25	55	do.	do.	September 26.
17	September 20	41	do.	do.	do. 27.
18	November 2	27	do.	Cured	March 14, 1841.
	1841.				1841.
19	January 13	40	Legs	Died	January 13.
20	March 12	48	Leg	Cured	June 26.
21	April 5	29	Legs	Died	April 5.
22	do. 20	48	Leg	Cured	June 30.
23	June 16	38	do.	Died	do. 20.
24	do. 16	5	Thigh	do.	do. 16.
25	do. 28	31	Leg	do.	July 1.
26	July 21	45	do.	do.	August 5.
27	do. 25	40	do.	Cured	October 21.
28	do. 31	32	do.	do.	February 23, 1842.
29	August 3	26	do.	By friends	September 11.
30	September 23	46	Legs	Died	do. 26.
31	November 6	21	Leg	Cured	January 27, 1842.
32	do. 29	28	do.	do.	February 28, 1842.
33	December 27	31	do.	do.	January 29, 1842.
34	do. 31	38	Legs	do.	February 25, 1842.
	1842.				1842.
35	March 15	27	Leg	do.	June 30.
36	do. 27	22	do.	do.	October 1.
37	April 14	62	do.	Died	April 19.
38	June 25	24	do.	Cured	October 30.
39	July 1	10	do.	do.	August 10.
40	do. 31	35	do.	do.	November 5.
41	August 10	28	do.	Died	August 14.
42	September 30	47	do.	do.	October 7.
43	October 15	31	do.	Cured	January 18, 1843.
44	do. 29	25	do.	do.	March 18.
45	November 30	31	Legs	Died	December 3.
46	December 10	19	Thigh	Cured	June 17, 1843.
	1843.				1843.
47	May 13	17	Leg	do.	July 12.
48	June 18	8	Thighs	Died	June 20.
49	September 8	32	Leg	do.	September 18.
50	October 3	9	do.	Cured	June 19.
51	do. 26	57	do.	Died	November 11.
52	December 20	33	do.	do.	December 26.
53	do. 24	40	do.	do.	January 2, 1844.
	1844.				1844.
54	February 14	26	do.	Cured	July 29.
55	do. 16	23	do.	do.	August 9.
56	do. 18	25	Legs	Died	February 24.
57	do. 22	7	Leg	Cured	Taken home by parents after amputation, but did well.
58	April 13	50	do.	do.	June 29.
59	do. 24	7	do.	do.	September 28.
60	July 3	41	Thigh	Died	July 3.

No.	Admission.	Age.	Leg or thigh.	Result.	Date of discharge.
61	July 7	19	Thigh	Cured	April 5, 1845.
62	do. 26	19	Leg	Died	August 1.
63	do. 31	23	do.	Cured	November 6.
64	August 10	13	Thigh	Died	August 11.
65	do. 15	25	Legs	do.	do. 15.
66	September 24	53	do.	do.	September 24.
67	do. 25	11	Thighs	do.	do. 25.
68	October 5	22	Leg	Cured	December 24.
69	do. 28	51	do.	do.	February 21.
70	December 5	39	do.	Died	December 6.
1845.					1845.
71	January 16	9	Knee	Cured	June 29.
72	March 20	10	Leg	Died	March 21.
73	do. 22	38	do.	Cured	June 29.
74	May 22	34	do.	do.	November 11.
75	do. 28	26	do.	do.	July 23.
76	June 17	25	do.	Died	do. 6.
77	do. 17	23	do.	Cured	September 26.
78	do. 18	51	do.	Died	July 6.
79	July 23	23	do.	Cured	October 2.
80	September 7	23	do.	Died	September 17.
81	October 20	39	do.	Cured	February 11, 1846.
82	November 18	30	do.	do.	do. 28, 1846.
1846.					1846.
83	February 25	31	do.	Died	February 25.
84	April 11	57	do.	do.	April 24.
85	do. 15	53	do.	Cured	August 3.
86	do. 28	11	Thigh	Died	April 29.
87	May 12	7	do.	do.	May 12.
88	June 18	63	Leg	Cured	September 12.
89	do. 19	15	do.	do.	do. 12.
90	July 8	29	do.	do.	do. 5.
91	do. 17	25	do.	do.	December 14.
92	August 28	49	do.	Died	October 4.
93	October 2	30	Legs	do.	do. 15.
94	do. 22	33	Leg	do.	do. 27.
95	November 6	30	Thigh	Cured	January 24, 1847.
96	do. 18	46	Leg	Died	November 22.
97	December 5	34	do.	do.	December 30.
1847.					1847.
98	February 13	15	do.	do.	April 26.
99	do. 16	37	do.	Cured	do. 14.
100	April 13	23	do.	do.	August 18.
101	May 4	31	do.	do.	July 1.
102	do. 10	48	do.	Died	May 12.
103	June 20	49	do.	Cured	November 10.
104	do. 25	43	do.	do.	September 18.
105	July 2	11	do.	Died	July 2.
106	do. 24	31	do.	Cured	October 26.
107	do. 26	28	do.	Died	July 30.
108	August 15	29	do.	Cured	October 23.
109	September 11	16	do.	do.	November 16.
110	do. 25	25	do.	do.	February 21, 1848.
111	October 12	21	do.	Died	October 29.
112	do. 22	40	do.	do.	November 10.
113	December 6	31	do.	do.	December 28.

No.	Admission.	Age.	Leg or thigh.	Result.	Date of discharge.
	1848.				1848.
114	March 11	11	Thigh	Died	March 15.
115	May 11	17	Leg	Removed	to Smallpox Hospital, and died of the confluent form.
116	July 1	21	do.	Cured	October 28.
117	do. 11	14	do.	Died	July 11.
118	September 22	36	do.	Cured	
119	November 8	21	do.	do.	April 14, 1849.
120	do. 30	10	do.	do.	February 3, 1849.
	1849.				1849.
121	January 10	9	do.	do.	October 15.
122	do. 21	44	do.	do.	November 17.
123	February 3	23	Thigh	do.	October 10.
124	do. 13	29	Leg	do.	September 13.
125	March 31	25	do.	do.	July 6.
126	do. 31	25	Patella	do.	June 9.
127	April 21	33	Leg	By friends	May 26.
128	May 23	21	do.	Cured	August 13.
129	June 3	50	do.	do.	do. 3.
130	do. 12	35	Thigh	Died	June 12.
131	July 3	4	do.	do.	July 4.
132	August 3	37	Leg	do.	August 3.
133	do. 17	23	do.	Cured	
134	do. 22	31	do.	do.	
135	October 10	21	do.	Died	October 24.
136	do. 15	36	do.	Cured	
137	do. 19	31	do.	Died	October 23.
138	November 1	22	do.	Cured	
139	do. 4	35	do.	Died	March 9, 1850.
140	do. 30	18	do.	Cured	do. 11, 1850.
141	December 8	36	Legs	Died	December 11.
142	do. 13	40	Leg	do.	do. 23.
143	do. 13	17	Thigh	do.	do. 19.
	1850.				1850.
144	January 4	8	Leg	Cured	February 14.
145	February 6	19	Legs	do.	July 11.
146	March 20	14	Thigh	Died	March 26.
147	April 25	27	Leg	do.	May 3.
148	do. 30	32	do.	Cured	July 27.
149	May 3	29	do.	do.	do. 5.
150	June 10	19	Thigh	do.	August 1.
151	do. 13	28	Leg	Died	July 11.
152	do. 18	20	Thigh	Cured	August 22.
153	July 9	11	Leg	do.	November 30.
154	do. 9	32	Thigh	Died	July 14.
155	do. 12	36	Leg	Cured	August 31.
156	do. 25	48	do.	do.	September 18.
157	do. 29	40	do.	do.	do. 3.
158	August 14	16	do.	do.	October 28.
159	do. 26	30	do.	do.	November 18.
160	September 13	36	do.	do.	do. 18.
161	do. 16	26	Thigh	Died	September 20.
162	October 9	18	Leg	Cured	November 18.
163	do. 9	32	do.	Died	October 15.
164	November 29	11	do.	Cured	June 5, 1851.
165	December 3	47	do.	Died	December 21.
166	do. 30	27	do.	Cured	March 10, 1851.

*Summary of the Compound Fractures of the Leg and Thigh treated from
January 1, 1839, to April 1, 1851.*

LEGS.					THIGHS.				
Years.	Whole number.	Cured.	Died.	Number amputated.	Years.	Whole number.	Cured.	Died.	Number amputated.
1839	7	4	3	2 cured	1839	5	3	2	
1840	6	2	4	2 died	1840				
1841	15*	8	6	2 cured 4 died	1841	1		1	
1842	11	7	4	4 cured 2 died	1842	1	1		
1843	6	2	4		1843	1		1	
1844	13	8	5	2 cured 1 died	1844	4	1	3	1 died
1845	11	7	4	1 cured 1 died	1845	1 knee	1		1 cured
1846	12	5	7	1 cured 3 died	1846	3	1	2	
1847	16	9	7	6 cured 3 died	1847				
1848	6†	4	1	2 cured	1848	1		1	
1849	18‡	11	6	1 cured 1 died	1849	5	2	3	
1850	18	14	4	7 cured 2 died	1850	5	2	3	1 cured
	139	81	55	47		27	11	16	3

The above table contains 166 cases of compound fractures of the leg and thigh. Of these, 27 were of the thigh, and 139 were of the leg.

Of the 166 cases, 92 were cured, 71 died, and 3 were removed from the Institution.

Of the whole number of cases of both leg and thigh, amputation was resorted to in 50 instances, of which 30 were cured and 20 died.

Of 116 cases (leg and thigh) treated without amputation, 65 were cured, and 51 died.

Of the 139 fractures of the leg, 81 were cured, 55 died, and 3 removed by friends. Among these cures were 28 after loss of the limb, and among the deaths were 19 after it.

Of the 27 fractures of the thigh, 11 were cured and 16 died. Among these cures were 2 after amputation, and among the deaths 1 after that operation.

The ages of the fractures of the thigh cured without amputation were respectively—fifteen, seven, twelve, two of nineteen, thirty, twenty-three, and twenty.

Of the whole number of cases of both classes, 53 were railroad injuries.

22 of the 71 deaths occurred within twenty-four hours after the admission of the patients, and in many of these there was no reaction from the shock inflicted by the injury.

With us, as in the New York Hospital, and as must prove the case in all

* One was discharged by request forty six-days after admission.

† One removed to Smallpox Hospital, and died of the confluent form of that disease some weeks after his injury.

‡ One discharged by request five weeks after admission.

large institutions, many of the accidents of the class treated of were almost necessarily fatal, being complicated with internal injuries of the most serious kind.

The subjoined summary will exhibit at a glance the results furnished in the hospitals of New York and Pennsylvania.

	Whole number of cases treated from January 1, 1839, to April 1, 1851.	Cured.	Died.	Proportion of cures.
Pennsylvania Hospital	166	95	71	57.23 per cent.
New York Hospital	158	79	79	50 do.
	Compound fractures of the thigh.			
Pennsylvania Hospital	27	11	16	40.74 per cent.
New York Hospital	26	5	21	19.23 do.
	Compound fractures of the leg.			
Pennsylvania Hospital	139	84	55	60.43 per cent.
New York Hospital	132	73	59	55.30 do.
	Amputations done in the above cases.			
Pennsylvania Hospital	50	30	20	60 per cent.
New York Hospital	32	14	18	43.75 do.

ART. II.—*On Hemorrhage from the Umbilicus in New-born Infants, with an Analysis of Forty-six Cases.* By FRANCIS MINOT, M. D.—[Read before the Boston Society for Medical Improvement, April 26, 1852.]

It is only within a recent period that the attention of medical men has been called to a class of cases, usually considered of rare occurrence, but certainly worthy of more attention than has hitherto been bestowed upon them. The subject of *hemorrhage from the umbilicus in new-born infants* scarcely occupies half a page in any treatise on Children's Diseases with which I am acquainted, and in most of them is wholly unnoticed; yet the numerous instances that have lately been reported in the journals show that this disease, whose very existence, perhaps, was hitherto unknown to some experienced practitioners, is either not a rare one, or has increased to a great extent within the last few years. It is quite probable, however, that our ignorance of the disease arises more from the deficiency of observations than from its rarity in former times; and as an illustration of this, I will allude to the description of a well-marked case, with a coloured plate illustrative of the *post-mortem* appearances, in Cheyne's *Essays on the Diseases of Children*, published in Edinburgh in 1801; the author also mentions other instances in which several children in the same family died of this affection. Capuron (*Traité des Maladies des Enfants, jusqu'à la Puberté*, Paris, 1820) describes the disease, but does not allude to its extreme fatality. On the other hand, it is not a

little remarkable that men of such large experience as Churchill and West should barely allude to the subject. The latter, whose work on the *Diseases of Infancy and Childhood*, "contains the results of 640 observations, and 199 *post-mortem* examinations, chiefly made among 16,276 children" who came under his observation, has never met with a single case.—Second edition, p. 417.

Of late years several able articles on this subject have appeared from time to time in medical periodicals. I would especially notice one by Mr. Ray in the *London Medical Gazette*, for March, 1849, vol. xliii., and another by Dr. Manley in the same journal for May, 1850, vol. xlv., as containing admirable descriptions of the disease, but founded upon a small number of observations. The only instance of any attempt at statistical results from the comparison of a number of cases, so far as I know, is that by Dr. Bowditch, based upon twelve observations (*American Journal of the Medical Sciences*, 1850, p. 63). The recent occurrence in my own practice of a fatal case of this affection (being the second instance which I have met with), has induced me to make a collection of such cases as were within my reach, in the hope of contributing something towards clearing up the obscurity which surrounds this subject. Besides those cases which are reported in the journals, I am indebted to the kindness of friends, and to the courtesy of other gentlemen, with whom I am not personally acquainted, for a large share of the observations whose results will be given below. Whilst gathering these materials, I have carefully excluded all those cases in which the hemorrhage may be considered as accidental, or traumatic, such as where the cord was imperfectly tied, or had shrunk after being tied, or where the ligature was prematurely removed; and have retained only those in which the bleeding appeared to be wholly idiopathic. I am aware that an analysis of forty-six cases cannot furnish results which are to be relied upon with great confidence; nevertheless, as I believe it to be more complete than any that has yet appeared, I offer it to the Society, in the hope, at least, that it may induce others to make careful observations of any similar cases they may happen to meet with, and thus to render more complete our knowledge of the nature and treatment of the disease.

For the sake of convenience, I shall arrange the results I have obtained under the following heads: General Description and Course of the Disease; its Symptoms; Pathological Anatomy; Nature; Causes; Diagnosis, Prognosis, and Treatment.

1. *General Description.*—Umbilical hemorrhage is a disease whose first symptoms are observed a few days after birth, and generally after the separation of the umbilical cord. A slight oozing of blood is perceived from the navel, which is at first easily arrested by compression or styptics, but returns in a few hours. A renewal of astringent or caustic applications is followed by only temporary relief, or by none at all. The bleeding continually recurs, and the child dies from exhaustion at the end of a period varying from a few hours to several days. If the hemorrhage be controlled by a

ligature, and in other cases where no ligature has been applied, extravasations of blood appear upon various parts of the surface of the body, and the mucous membranes, and after the separation of the ligature, the hemorrhage usually returns. Accompanying these symptoms, and occasionally preceding them, there is often well-marked jaundice, and infrequent, light-coloured dejections from the bowels, indicating derangement of the functions of the liver. The subjects of this disease are frequently robust-looking, and apparently healthy at birth, and born of healthy parents. They appear to suffer little or no pain. A majority of the patients are of the male sex, and there is a predisposition to the disease in certain families.

2. *Symptoms.*—These are reported in thirty-nine cases. A large proportion of the children (twenty-six out of thirty-two), were to all appearance perfectly well at birth. Many are described as being “stout and healthy,” “large, plump, and hearty,” &c. Six were feeble at birth. In nine cases no symptom intervened between birth and the hemorrhage, which in one case did not commence until the eighteenth day after birth. In general, however, the fatal symptom was preceded by others, of which the most remarkable was jaundice, which was noticed in twenty-two cases. Besides these, a “saffron hue” was observed four hours after death, in the body of a patient who had constipation and clay-coloured stools during life, and in three others the skin is described as sallow, or light yellow. One of the latter had profuse hemorrhage on the evening of the day on which the cord separated, which was finally arrested, and the child lived. Six years afterwards she had an attack of jaundice from which she recovered. Only one patient with well-marked jaundice recovered. The jaundice was the first symptom noticed in ten cases. Along with jaundice there was in most cases constipation and clay-coloured stools, the former symptom being noticed six times, and the latter nine times.

The association of jaundice with the hemorrhagic diathesis, is well shown in the following cases, which are reported by Dr. W. C. Anderson in the *Boston Medical and Surgical Journal*, vol. xli. p. 442 (for 1850). A mother who had lost a female child from umbilical hemorrhage, with jaundice and purpuric spots, had had another daughter previously, who at the age of four months, became icteric, and had purple spots without hemorrhage, and recovered. A woman who lost a child on the eighth day from umbilical hemorrhage, with jaundice and purpura, had another who died on the fifth day with jaundice and purpuric spots, but without hemorrhage.

The time at which the hemorrhage commenced was exceedingly irregular, varying from a few hours to the eighteenth day after birth, the average of forty-one cases being the eighth day. In four cases, it began before the separation of the cord; in three, immediately after; in others, at periods varying from one to thirteen days; the average of nineteen cases being five and a half days. There is no apparent connection between the condition of the child, and the length of time which elapses before the commencement of bleeding.

Thus, in one child which was quite feeble, there was no bleeding until the thirteenth day after birth, and the fifth after the cord fell off. In another feeble child, the hemorrhage began on the second day, before the separation of the cord. A child, which was "plump and hearty" at its birth, began to bleed on the third day; a "stout and healthy" infant on the sixteenth day, &c.

The character of the flow of blood is not generally described, although it is easy to infer that in most cases it was a continuous oozing, rather than a jet. Out of eleven cases in which these particulars were recorded, the former state of things occurred eight times, the latter three times. The appearance of the blood during life is noticed eight times. In one instance only did it coagulate. In seven it did not coagulate, and in most of them it was thin and light coloured. In one instance it contained bile, as was evident from the yellow stain which it imparted to linen.

Echymoses were noticed in twelve cases. They generally existed in considerable numbers in various parts of the body, and also on the tongue, and inside of the mouth. In one case they preceded the bleeding, in one they followed it, and in four they appeared immediately after the arrest of the bleeding by the ligature, as if the blood, being checked in its onward current, had been forced to find a vent elsewhere.

Pain was noticed in four instances; in two, it appeared to be caused by extending the legs. The observations are necessarily very imperfect in this particular.

Cerebral Symptoms occurred four times; in three the patients (one of whom recovered) appeared almost comatose. One child died with symptoms of compression of the brain.

Condition of the Bowels.—Clay-coloured stools and constipation usually accompanied jaundice. The former occurred nine, and the latter six times. In three instances, the dejections were bloody; in two, they were green, and in one of these "regular."

Vomiting was recorded in one case only.

3. *Morbid Anatomy.*—The results of thirteen autopsies show that there is no one lesion which is constantly found.

The *umbilical vessels* were examined in eight instances. In seven, all the vessels were pervious; but in one of these the vein and left artery were almost entirely obliterated, the right artery being pervious. In another, the vein was contracted, without being obliterated, and the arteries resembled white cords, the canals being very narrow. In one case the arteries were closed, but the vein was pervious. In one case, all these vessels were obliterated: this patient died on the tenth day.

With regard to the other fetal openings, the statistics are not sufficiently numerous to be of any value. The ductus arteriosus was found closed in two cases, and nearly closed in two others. The ductus venosus was open in one

case, and closed in one. In one observation it is noticed that the foramen ovale was open.

The *liver* was examined in seven cases. It is described as

Full, firm, dark-green, in	1 case.
Of natural size, colour, and consistence, in	1 “
Of normal size, olive-brown colour, the free edge ecchymosed, in	1 “
Yellow, flaccid, soft, adhering to and staining a cloth like feces, in	1 “
Large, reddish-brown, in	1 “
Of normal size, soft, full of bile, in	1 “
Slightly congested and denser than usual, in	1 “
Not described, in	1 “

The *gall-bladder* was noticed in seven cases. In one, it was empty and contracted; in one, it contained a small amount of bile; in two, it was distended; in one, it was “not distended;” in one, it contained a light amber fluid. In all these cases there was icterus except the last, in which nothing is said of it, though the dejections were reported to be “white like milk, the patient never having passed anything like meconium or bile.” This patient died on the twentieth day, having begun to bleed eight days after the separation of the cord. In one, it was small, collapsed, containing only a little mucus (the ducts, in this case, were wanting); in one, it contained a quantity of bile, which could not escape, owing to the ductus communis being plugged.

The condition of the *gall-ducts* was reported seven times. In four cases, they were all pervious; in one, they were “wholly absent;” in one, the ductus communis terminated in a *cul-de-sac*; in one, the same duct was completely closed by a plug of inspissated bile.

The abdominal viscera were tinged yellow in four cases, from the presence of bile in the tissues. Ecchymoses, in various organs as well as the skin, were noticed in two cases.

The state of the *blood* is described, in three instances, as being pale, thin, liquid, or containing slight coagula. In one case, there was pus mixed with blood in the umbilical arteries.

4. *Nature of the Disease.*—The facts which I have collected lead me to think that idiopathic hemorrhage from the umbilicus in young infants is only one of the various manifestations of the hemorrhagic diathesis which, in other cases, is exhibited in bleeding from the gums, mouth, stomach, intestines, &c., and in the appearance of purpuric spots beneath the skin in various parts of the body. In proof of this, we see the concurrence of these phenomena with umbilical hemorrhage. Thus, nothing is more common in the latter disease than a purpuric eruption. In three cases, there were bloody dejections, and in one, bleeding from the gums. Another argument is the thin and watery condition of the blood, and its great deficiency in fibrine, whereby mechanical means become almost wholly inefficacious to arrest its flow.

Although occupied at present with a single local manifestation of this affection, its dependence on a constitutional cachexy should never be lost sight of, especially in connection with the subject of treatment; for, unless means be adopted for correcting the constitutional difficulty, local applications offer but a slender chance of saving the patient.

5. *Causes.*—The causes which have been assigned to umbilical hemorrhage comprise hereditary predisposition, the influence of sex, derangement of the functions of the liver, and an imperfect closure of the umbilical vessels.

In what way the *condition of the parents* was concerned in the production of the hemorrhage it is not easy to ascertain. Of the health of the fathers little or nothing is said. Of twelve mothers, eleven were healthy, one was feeble. It is evident that the disease may be the result of some inherited peculiarity, because, in several instances, two or more children in the same family have been affected in the same way. At the same time, as Dr. Manley remarks, these cases differ from the ordinary rule in the history of *bleeders*, for in none of them is the direct transmission of the hemorrhagic constitution clearly proved. He alludes, however, to one case (not included in my collection), in which a woman, who had been liable to copious epistaxis, and whose mother and sister were also subject to hemorrhage from various parts, lost a male infant, on the third day after birth, in consequence of hemorrhage from the navel and the gums. The same law obtains in this as in other transmitted diseases, namely, that while some of the children succumb to the malady, others escape it altogether; thus, in four instances, the mothers each lost two children from umbilical hemorrhage, and each had two living and healthy; one woman lost three, and three others were healthy; another lost two, and had three living. Other similar cases are also alluded to by the reporters of some of these observations. Nothing has been observed in the condition of the mother which could account for the disease transmitted to her offspring, nor does her health appear to differ during successive pregnancies which have resulted in healthy children and in those born with the hemorrhagic tendency. How far the *imagination* of the mother can have any effect on the production of this or any other disease in her child, can only be ascertained by numerous and accurate observations. A case bearing on this subject will be noticed hereafter.

Out of fifteen cases in which the nature of the *labour* was noticed, it was natural in fourteen and difficult in one. This last case occurred at the Lying-in Hospital in Boston, under the care of Dr. William Read. It was a case of twins. The first child presented the shoulder. Spontaneous evolution took place, the breech presented, and the child was stillborn. The second child was quickly and easily expelled, but was feeble. It began to bleed on the second day, and died on the third.

Sex.—The predisposition of infants of the male sex to this disease is remarkable, and is particularly alluded to by Mr. Ray. The comparison of a large number of observations have shown the disproportion to be less than he

thought it. Unfortunately, in a number of the cases, the sex was not noticed; but out of thirty-two cases in which it is alluded to, twenty-two (or 68 $\frac{2}{3}$ per cent.) were males, and ten females. Whether this difference be anything more than accidental, can only be ascertained by more ample statistics.

The remarkable proportion of cases in which *jaundice* was noticed (twenty-two out of thirty-nine, or fifty-six per cent.), shows it to be something more than a mere coincidence. Whether, to use the words of Dr. Cheyne, the bleeding proceeds "from the unhealthy change produced in the blood by the reception of the bile into the mass of fluids," becomes a question of interest, especially when considered in connection with a class of cases in which icterus in adults was accompanied by a remarkable tendency to obstinate and even fatal bleeding from slight wounds, such as scarifications or leech-bites. Several such cases are quoted in Dr. Manley's paper, and others have been reported to this Society by Dr. J. B. S. Jackson, all of which tend to show that the presence of bile, or of some of its elements in the blood, appears to diminish the coagulating power of this fluid. The jaundice itself was satisfactorily explained in three instances by the absence or obstruction of the bile-ducts; but in four cases the ducts were pervious. It is plain, however, that derangement of the biliary function does not play an indispensable part in the production of the disease, since in three cases it was noticed that there was no yellowness of the skin, and in five the autopsy showed the liver to be, to all appearance, healthy. Moreover, a remarkable case is reported by Dr. Campbell, in which icterus commenced on the day after birth, and the child died at the age of six months. The liver was so large as to fill the greater part of the abdomen, and neither a gall-bladder nor bile-ducts could be discovered. Yet, in this case, there was no hemorrhage. The association of these two phenomena, and, at the same time, their independence of each other, are shown in the following cases, communicated to me by Dr. A. Hooker, of East Cambridge, who says: "I attended a woman, to all appearance healthy, and who has good labours. She has lost four children from umbilical hemorrhage. She has since had a child which presented a slightly jaundiced look, but no hemorrhage took place, and it did well." The other case is as follows: "A mother had two children, who are now alive and well; but one of them had jaundice at the age of four or five. She has since had two others, both of whom died of umbilical hemorrhage, preceded by jaundice.

The *state of the umbilical vessels* has been supposed to be quite sufficient to account for the hemorrhage in many cases. I am far from thinking that a pervious state of these vessels, a few days after birth, ought to be considered as a pathological condition, and, in this opinion, I am supported by Mr. Ray, who says he has frequently found them pervious in children of a month or six weeks, who died without bleeding; hence, this condition alone cannot be enough to account for the hemorrhage in those children who *did* bleed. Dr. Manley, however, believes that, in some of the cases, "this natural process was defective, and not sufficiently advanced." He quotes the results of observa-

tions of Billard and Bernt on this subject, who agree that the process of obliteration *commences* as soon as the second or third day after birth; but, unfortunately, nothing is said as to the time when it *terminates*. If the hemorrhage were owing to the open state of the vessels, why should it not be arrested permanently by the ligature, as in any other bleeding vessel, instead of returning after the ligature came away, which it did in almost every instance? An example of the persistence of an umbilical artery in an adult, which proved very embarrassing during an operation for hernia, may be found in the *Brit. and For. Med.-Chirurg. Review*, for April, 1852, p. 553.

6. *Diagnosis*.—The diagnosis of umbilical hernia is easy, and is only liable to be confounded with accidental bleeding, such as occurs from an imperfectly tied cord, or one which contracts very much after being tied. In no case that I have met with did the bleeding take place from the *end* of the cord. It proceeds by exudation from the sides of the cord (where that has not fallen off), from the margin of the umbilicus, from granulations at the bottom of the cicatrix, or directly from the umbilical vessels. The frequent coexistence of jaundice with this affection should always be borne in mind, and whenever a new-born infant becomes very yellow, especially if there have been other cases of umbilical hemorrhage in the family, every precaution should be taken to prevent bleeding. Ecchymoses may also sometimes serve as marks of the disease before the appearance of the fatal symptoms. I believe they seldom fail to be followed by it; but they are not of frequent occurrence.*

7. *Prognosis*.—Out of forty-six cases, thirty-nine, or more than eighty-four per cent., were fatal at periods varying from six hours to six weeks after the commencement of hemorrhage, the average of twenty-seven cases being six days. Six of these children died on the day after the bleeding began; five on the second day after; three on the fourth day. From this we see that umbilical hemorrhage is an extremely fatal affection. Even in those children who are apparently robust, and seem to offer the best chance for recovery, the prognosis must be very guarded, while, in feeble infants, it is almost inevitably fatal. We must not, however, forget that many cases which recovered are perhaps not reported. The descriptions given of the favourable cases prove that they were genuine examples of the disease; hence, although the chance of recovery is excessively small, the prognosis is not absolutely fatal in every case. Jaundice appears to be a very grave symptom, since only a single case recovered in which it had been observed.

8. *Treatment*.—The treatment consisted in various astringent, styptic, and caustic applications to the navel, and the internal exhibition of substances supposed to act specifically on the liver and on the blood. Among the former class were lunar caustic, acetate of lead, tannic acid, alum, matico, the actual

* Since the above was in type, a fatal case has been reported to me, in which the first symptom noticed was an extravasation on one eyelid. The child was large and vigorous.

cautery, &c.; also plaster of Paris, pressure, and the ligature. The latter included mercurials, taraxacum, sulphate of soda, cathartics, &c.

The treatment employed in those cases in which the hemorrhage was permanently arrested was principally the following:—

Compression in	3 cases.
Ligature in	3 “
Collodion in	1 case.
Plaster of Paris in	1 “
Scrapings of sole leather in	1 “
Nitrate of silver in	1 “

But in three of these cases the patients died, eventually, from exhaustion, or diseases evidently caused by the feeble condition of the child.

It is recommended by some writers to cut down upon the bleeding vessel and tie it. This must be a very difficult, if not impracticable operation, even in the small number of cases in which the bleeding comes from a single vessel. I think the ligature *en masse* is easier, safer, and more effectual. The ligature, however, will succeed in a very small number of cases, unless the diathesis upon which the malady depends be corrected. The same may be said of styptic and caustic applications, which in four cases actually appeared to increase the hemorrhage.

The internal use of astringents and tonics appears to me to have been too much neglected in the treatment of these cases. I find but a single instance of their employment among thirty-three cases whose treatment is reported. We employ such remedies in purpura hemorrhagica, in scurvy, and other hemorrhagic diseases of adults; why should they be omitted in a disease so similar in its character in infants? The instance referred to was communicated to me by Dr. S. S. Whipple. The child, a male, was to all appearance perfectly sound, and weighed between nine and ten pounds. It was born on the 10th of May last, of robust parents, and after a perfectly natural labour. Thirty hours after birth, Dr. W. was called to it, and found blood issuing from around the umbilicus, rather by exudation than from any disturbance to the integrity of the parts. It was not disposed to coagulate, and was compared to cranberry juice in consistency and colour. It was immediately checked by a solution of the sulphate of copper. At the end of twenty-four hours, the hemorrhage returned, more profuse, with extreme prostration. The action of the heart was imperceptible; and the respiration was accompanied by a feeble moaning. The bleeding was again arrested by styptic applications, and tincture of the muriate of iron, with brandy, was given in as large doses as the patient could bear. He soon revived, with a healthy appearance, and commenced taking the breast. The discharges from the bowels and bladder were natural, and he continued to improve in strength and appearance for four days, during which time the cord was detached without hemorrhage. On the 9th day (second from the separation of the cord), the bleeding commenced

again, and he died on the 10th. In this connection, I will also mention an interesting case lately reported to the Society by Dr. W. E. Coale; there was no bleeding from the navel, and, therefore, the case is not included in my tables; it is evidently identical in its nature with the others: A female child began to vomit blood the day after its birth. The next day she also passed considerable quantities by stool, so that two towels were saturated with it. One drop of the aromatic sulphuric acid was given this day at 11 A. M., and continued every two hours. On the third day, the hemorrhage had diminished; on the fourth, it was still less; but the child was pale and very feeble. A quarter of a grain of sulphate of iron in solution was now substituted for the acid. On the fifth day, the symptoms improving, the medicine was ordered every four hours; and the intervals being gradually lengthened, it was left off on the seventh day. The child recovered perfectly. So far as two cases teach anything, these afford some encouragement, and the use of the mineral acids, or other astringents and tonics should always be tried.

As to local treatment, we have seen that the ligature and pressure were each successful in three cases, and that caustic and styptic applications generally failed. The most that can be hoped from local application is a temporary arrest of the bleeding until the condition of the blood can be improved. The ligature appears to me the most likely to effect this, and the sooner it is employed the better, since every drop of blood is of importance in such young subjects. I believe the best mode of employing it is to transfix the umbilicus by two needles at right angles, and wind the thread tightly underneath them.

It is important to sustain the strength of the patient by nourishing diet and stimulants; the apartment should be cool, the clothing light, and every effort made to prevent the child from crying.

I am indebted to Dr. M. S. Perry for a valuable suggestion concerning the prophylactic treatment to be employed by women who have already given birth to children with the hemorrhagic diathesis when again pregnant. Observing that women accustomed to take alkalis in considerable quantities during pregnancy, for dyspeptic or other symptoms, were peculiarly liable to hemorrhage after parturition, he has been in the habit of interdicting such remedies, and of substituting for them the mineral acids with very satisfactory results. Dr. Perry suggests that the use of the mineral acids during pregnancy by women whose children have been affected with umbilical hemorrhage might be followed by favourable results. The experiment is worth trying.

The following extract from the letter of Dr. Whipple (before referred to) is worthy of attention: "I will mention a singular coincidence in the case, which must be taken for what it is worth: Some time in the latter months of pregnancy a female friend told the mother to be sure and caution her attendants about the navel, as a friend of hers had had much trouble from carelessness of a like kind. She said she had felt great solicitude from that time; the description of the bleeding child gave her feelings something of a shock, and she was

frequently heard to speak of the circumstance to the nurse before her confinement." In our ignorance of the precise extent of the influence of the imagination of a woman upon the physical organization of her offspring, it is surely worth while, on all accounts, to urge upon the mother the expediency of avoiding those useless anticipations of evil in which pregnant females are prone to indulge.

It has been suggested that tying the cord before its pulsations have ceased may be a cause of hemorrhage in new-born infants. No light is thrown upon this question by the statistics I have collected, except that in one fatal case the cord was not tied until it had ceased to beat. Mr. Ray says that he has observed the cord pulsating even after the placenta was thrown off, and that in other cases it has seemed as if the child did not begin to breathe and cry vigorously until the cord was tied.

For convenience of reference, the most important of the foregoing results are subjoined:—

Mothers healthy in	11 out of 12 cases, or $91\frac{2}{3}$ per cent.			
Labours natural in	14	"	15	" $93\frac{1}{3}$ "
Children born healthy in	26	"	32	" 81 "
Male children in	22	"	32	" $68\frac{3}{4}$ "
Jaundice in	22	"	39	" $56\frac{2}{5}$ "
Ecchymoses in	12	"	39	" 30 "
Umbilical vessels pervious in	7	"	8	" $87\frac{1}{2}$ "
Gall-duets pervious in	4	"	7	" 57 "
Liver apparently healthy in	7	"	8	" $87\frac{1}{2}$ "
Fatal cases in	39	"	46	" 84 "

Day on which hemorrhage commenced, average of 41 cases, . . . 8th day.

Average duration of 27 fatal cases, after commencement of hemorrhage, 6 days.

ART. III.—On Cell Organization.—By JAMES J. WARING, M. D.

SCIENCE is man's interpretation of facts daily presented to his senses; but for the acquirement of these facts he is indebted to his own hands and the instruments which his own ingenuity has placed in them. It is obvious, therefore, that striking advances in the means for observation must ever create epochs in the history of science. The sixteenth and nineteenth centuries present two such epochs. In the sixteenth, Galileo's gift converted astronomy, then little more than a sluggish speculation, into a vast science, capable of grasping and fixing down to mathematical demonstration, truths too grand to realize. It enabled the astronomer to mount into regions of space, and convert into orbits and tangents soil consecrated to the gods. And

in the nineteenth, the microscope, slowly, yet finally, developed in all its powers, has achieved no less. It has made that a science which was before an art, and bestowed upon the followers of *Æsculapius* principles, where before they only possessed rules. It, too, has not spared the domain of myths and fables, but has converted into physical and chemical processes, into *plastic* and *metabolic* powers, the "fire of Prometheus." Yet, with the exception of that chosen band of men, who have either devoted their lives to the pursuits of science, or, at a distance from its engrossing interests, have watched with pleasure its developments and appropriated its practical lessons, few are cognizant of the achievements made by this noble instrument during the last thirty years. It has not merely added *details* to physiology, but has given to it a totally new aspect; for its discoveries have admitted of a comparison and generalization which have justly entitled it (physiology) to the rank of "philosophy." It has not merely opened to the investigations of men the treasures of the infusorial world, rich in varied forms of beauty, and wonderful in its minute yet perfect mechanism of organized beings; it has not merely furnished material for the elucidation of questions of much geological interest, but has added one crowning achievement, in comparison with which all others sink into insignificance—"the reduction of all organized structure to an elementary form, the cell."

The invention of the microscope is involved in much obscurity, and its early history, at best, is only an idle speculation. Roger Bacon, an Englishman who flourished about the third century, possesses the uncertain distinction of having invented both telescope and simple microscope; and Zacharias Jansen, a Dutchman, who lived towards the close of the sixteenth century, possesses the equally uncertain distinction of having invented the compound microscope. Be this as it may, it is certain that the foundation of the Royal Society, in the seventeenth century, was the commencement of an era remarkable for optical science. The early volumes of its transactions are filled with endless modifications of the microscope, and literally teem with discoveries made through its instrumentality. These, however, were of minor importance, and two centuries passed away before any of moment were made. The difficulties of chromatic and spherical aberration rendered all efforts for the improvement of the microscope ineffectual, and the instrument, during this period, remained in a very imperfect state. Science and learning were doomed to disappointment in the very vestibule of glorious discoveries. These difficulties, however, were at length surmounted, in 1754, by Mr. Dolland, who invented the achromatic lens. Upon this discovery, the telescope immediately started into full vigour, and became an instrument of the highest powers, only ceasing to advance from the mechanical difficulty of making object-glasses over sixteen inches diameter, free from flaws and striæ. Not so with the microscope; it continued an imperfect instrument, in spite of the discovery; so that, whilst the great truths of astronomy date from this period, those of physiology are only now in process of development. It may seem strange to us, at the pre-

sent day, that, when the only defect in principle, the only real obstacle had been surmounted, the microscope should have remained stationary; but it is to be remembered that whilst, in the telescope, the distance of the object requires a considerable focal distance, necessarily large glass, and slight curvature—in the microscope, the nearness of the object requires a small focal distance, a small glass, and a great curvature. Hence, a mechanical difficulty arose in the application of the principle to the instrument. Little more was heard of the microscope till the year 1823. In this year, experiments were set on foot in France by M. Sellegues, and followed up by experimenters of Munich, Modena, Paris, and London, which resulted in a complete triumph. In the following year (1824), the most memorable in the history of the microscope, the gentleman first named presented to the Academy of Sciences an instrument with an object-glass of four achromatic lenses; and in the same year, without a knowledge of what had been done on the Continent, a Mr. Tully, of England, constructed a compound microscope with an achromatic object glass, as perfect as any of similar power made at the present day. The instrument thus invented did not possess the great magnifying powers which it afterwards acquired, yet was considered so perfect as to give rise to the boast that “the microscope was placed completely on a level with the telescope, and, like it, must remain stationary in its construction. Science, however, still continued indefatigable in labour and research. Achromatization continued to be a subject of close thought and deep study to many, until, finally, in the year 1829, Joseph Jackson Lister, Esq., in a paper which he read before the Royal Society, suggested those improvements which have placed it on its present high footing.

We now naturally turn to inquire, how far the microscope has repaid the cost and labour expended upon it. That it has done so, there can be no doubt. Indeed, it will be interesting to find that the discoveries and truths of physiology have kept even pace with its development, and that they become a sequel to its history.

Previous to the year 1830, the date of Mr. Lister's communication to the Royal Society, little more than a surface knowledge of minute microscopic anatomy prevailed. An imperfect division into functions, organs, and tissues existed, but not sufficiently so to deserve the name of science. Hook, Grew, Malpighi, Leeuwenhoek, and Lieberkühn deserve the highest praise for their discoveries, which are wonderful when we consider the imperfect means for observation which they possessed. The cellular structure of plants was discovered, in 1619, by Robert Hook, an account of which may be found in his *Micrographia*, published in 1667. Marcello Malpighi, a professor of Bologna, gave a still more accurate account of their structure in his great work, *Anatomie Plantarum* (1670). He not only confirmed the observations of Hook, but went a step farther, and maintained that all vegetable tissue was composed of cells, which he called utriculi. Leeuwenhoek, a contemporary of Hook, first witnessed, in the web of a frog's foot, the truth of Harvey's proposition, and

Lieberkühn first described the follicular structure of the mucous membrane of the intestines. Yet these were not a recognition of the intimate structure, functions, and powers of cells upon which all physiological science is based! No writer, no observer, up to the year 1830, had propounded the individual existence of cells, and their influence upon the various functions of the vegetable and animal economy. It is true, they perceived and acknowledged that organic changes were made through the medium of cells, and thus recognized their general office; but how those changes were made, and how their germination, nutrition, and reproduction took place, they had not the faintest idea. Without instruments, they were without data from which to draw conclusions. For instance, they defined these cells to be "hollow spherical structures" (which Grew likened to the froth of beer), imbedded in a homogeneous substance, whose walls were composed of agglutinated fibres. They looked upon them as possessing a mysterious, vitalizing influence on the whole organism, which they called indefinitely "anima vita," and by other parallel terms. Such were the vague notions which were then held, and continued to be held, till Schleiden published his views and observations on the vegetable cell (*Phytogenesis*, *Müller's Archiv.*, 1838); and Schwann, his article on the *Analogy of Animal and Vegetable Tissues*.

These two gentlemen are regarded as the fathers of the cell-theory. Let us investigate the grounds of such praise. Previous to doing this, however, for the sake of future distinctness, I present a definition of the cell. In the language of Todd and Bowman: "An organized body is composed of parts distinct from each other in structure and function, and may be subdivided into a series of textures, each differing from the other in physical and vital properties. These tissues again are each the development of the simplest and most elementary organic form with which we are acquainted, a cell containing another within it (the nucleus of Brown and cytoblast of Schleiden), which again contains a granular body (nucleolus)."

Now, as I have said, ever since the knowledge of vegetable anatomy was sufficiently advanced to admit of a classification of the plant into tissues and organs, and the assignment of functions to those organs, the existence of cells and their influence in the organism were recognized. Moreover, the existence to the cell of a nucleus and its uniform presence in embryonic development had been pointed out by Robert Brown as early as 1833 ("Observations on Orchideæ," *Trans. Linn. Soc.*). It is true we are indebted to Schleiden for the discovery of the nucleolus, but this is the least of his merits. We must look further. In what, then, do we naturally inquire, does his great praise consist?

In early periods, the question of cell origin which naturally arose in the minds of physiologists was dismissed as of little importance; but, during the beginning of the present century, had been the subject of much speculation. Sprengel and Turpin supposed that cells originated from starch granules, a mere hypothesis which facts were unable to sustain. Raspail has given a

true explanation of the process; but so vague, and so destitute of demonstration as to attract no attention from the physiologists of his day. The latter, in his two works, "*Nouveau Système de Physiologie et Botanique*" and "*Chimie Organique*," has thrown out observations which show a truer conception of the nature and functions of the cell than had been shown by any writer of that period. Nevertheless, an Ishmaelite in the domains of science, he has gained little honour or credit for his originality; we, however, as lovers of truth, should bestow upon him a just meed of praise for his real priority in giving expression to some of the most important principles of the cell-theory. Thus, he first realized that the whole organic world is the varied development of a primary form, the cell. In his enthusiasm at the discovery, he says: "Donnez moi un point d'appui a dit la statique, et je souleverai le monde. La physiologie, &c., dit: Donnez moi un vésicule organique donée de vitalité, et je vous rendrai tout le monde organisé." Again, he first pointed out the true nature of the cell, and its important function of imbibition. He says: "La cellule * * est une espèce de laboratoire de tissus cellulaires qui s'organisent et se développent dans son sein. Les parois imperforées ont la propriété de puiser par aspiration, dans les liquides ambiants, les élémens nécessaires à cette élaboration." And again, he first expressed, in intelligible language, the nature of germination by two elements, male and female. He says: "Toute cellule, pour élaborer les matériaux qu'elle secèle, au profit de son développement, a besoin de recevoir une impulsion vitale, c'est-à-dire, une fécondation spéciale a sanature. L'effet immédiat de cette impulsion vitale et fécondation est de déterminer, sur la paroi interne de la cellule fécondée, la formation d'un centre, d'un foyer d'action, qui devient alors à son tour l'agent fécondateur de toutes les cellules du nouvel être."

Still these opinions, thus thrown out, received little credence in the physiological world. They were justly regarded as speculations rather than demonstrated facts. In view of all these attempts and failures, Schleiden, in turn, puts to himself this simple question, "How does that peculiar little organism, the cell, originate?" and undertakes to give it an answer founded upon undeniable facts. He says: "As the constant presence of this nucleus in the cells of very young embryos and in the newly-formed albumen could not fail to strike me in my extensive investigations into the development of the embryo, it was very natural that the consideration of the various modes of its occurrence should have led to the thought that this nucleus of the cell must hold some close relation to the development of the cell itself. I consequently directed my attention particularly to this point, and was fortunate enough to see my endeavours crowned with success."

In this investigation he brought to light and proved certain facts which in their aggregate constitute the "Cell Theory," and which give to previous speculative "nothings a local habitation and a name." He, more especially, first pointed out the importance of the nucleus and nucleolus in the germination and reproduction of cells; was the first to describe their peculiar mode

of progress and development; and first laid down the no less important proposition that "each cell leads a double life; an independent one pertaining to its own development alone, and another incidental in so far as it has become an integral portion of the plant."

Though, as I have shown, the simplicity in structure of vegetable tissue was easily demonstrated, and its cellular and even cell structure became well known, a similarity of structure and development in animal tissue was never dreamed of. Plants, according to an old opinion, grew by imbibition into their parenchymatous structure of a nutritive material, which was with little variation converted into cells; but animals, endowed with vessels and a circulation, grew by the deposit around those vessels of an organized material, and tissues, into which no vessels were seen to reach, were called a secretion such as the epidermis, the nails, and hair, or were said to have a "plant-like" growth, as in the case of the ovum. A few years previous, however, to the investigations of Schwann, an imperfect knowledge of the existence of cells in certain tissues of the body became known by experiment to certain observers. Thus, the cells of the adipose tissue, epithelium, and certain forms of cartilage in the embryo were described as perfectly "plant-like" in appearance. Müller had described with great accuracy the cartilage cells of the chorda dorsalis of embryos; Henle had in the year 1837 observed the independent growth of epithelial cells (I mean a growth independent of vessels); and Valentin, a little later, had remarked a notable likeness between the nucleus of epidermal cells in animals and epidermal cells in plants. But these were spoken of as mere fortuitous analogies occurring in vegetable and animal tissue, and gave rise to no *clue* from which could be deduced the existence of a uniform law of development in cell tissues. Fibres, cells, and molecules were formed each by their own peculiar arrangement, and a relation between fibre and cell, or cell and molecule, in their principle of development, never entered into the speculations of physiologists. When, then, Schleiden pointed out the importance of the cytoblast (*Kutos* cell, and *Blastos* germ) in the growth of vegetable cells, it naturally led Schwann, who had thought and studied much upon this subject, to seek for a similar property in animal cells. The chorda dorsalis and cartilage of embryos, already accurately described by Müller, furnished him ready material for observation. I need scarcely add that he found immediate confirmation of his happy supposition. Schleiden's cytoblast certainly seemed like the fairy's wand whose magic touch converted Schwann's tangled woof of material into the well-arranged threads from which was quickly spun the beautiful fabric of cell classification. It was but a step to pass to the examination of every tissue in the body, and meet with a similar result. He immediately published the result of his labours, and with it a classification of the tissues founded upon cell development. Many distinguished physiologists have made the subject of classification a study as well as an amusement, and have presented to the public classifications worthy of their authors. I introduce but one of these, however, the classification of Dr.

Leidy, of Philadelphia, which, though familiar to his own students, is not generally known.

CLASSIFICATION BY DR. LEIDY.

ULTIMATE PHYSICAL ELEMENTS OF ORGANIZED BODIES.

- | | |
|-------------------------|---------------------------|
| I. Blastema. | III. Amorphous filaments. |
| II. Amorphous granules. | IV. Amorphous membranes. |

PRIMARY PHYSICAL FORM OF ORGANIC BODIES.

Organic Cell.

SECONDARY PHYSICAL ELEMENTS.

Tissues.

- I. Cells isolated or free—Corpuscular tissue.
- II. Cells aggregated or in laminæ.
 1. Adipose tissue.
 2. Epithelial tissue.
 - a. Mucous.
 - b. Serous.
 - c. Epidermic.
 3. Glandular tissue.
 4. Ganglionic “
 5. Pigment “
 6. Anonymous tissue, as spleen, &c.
- III. Cells with parietes blended and contents removed.

Structureless membrane.

 - a. Basement.
 - b. Capsular.
- IV. Cells with parietes blended with an intercellular substance.
 1. Cartilage tissue.
 2. Osseous “
- V. Cells forming tubes with solid or fluid contents.
 1. Capillary tissue.
 2. Muscular “
 3. Nerve fibres.
 4. Dentine.
- VI. Cells converted into a filamentous substance.
 1. White fibrous tissue.
 2. Yellow elastic “
- VII. Cells converted into a prismatic column.
 1. Enamel tissue.
 2. Crystalline.
- VIII. Cells converted into a corneous substance.
 1. Pileous tissue.
 2. Corneous.

The discovery, thus, of an analogy existing in the principle of development, of vegetable and animal tissues, was an important step taken in the history of Physiology, but not, however, more important than one since taken as to the nature and offices of the Germ. The nature and functions of the *Cell* have been thoroughly investigated, but the nature and functions of the *Nucleus* yet need such an investigation. Schleiden, as I have said, first

called attention to its important influence over the functions of the cell and its invariable presence; since his time, observers have generally recognized the fact, but have made no important investigations into the subject. In the year, 1849, however, a paper was published purporting to be a lecture delivered before the Royal College of Physicians upon Parthenogenesis, in which its author, Robert Owen, calls attention to the peculiar connection existing between the nucleus and the developing germ. I will make a few extracts from his paper in illustration of his views: "The phenomena that ensue upon the impregnation of the ovo-germ are essentially the same up to a certain point in all animals, and consist in the formation of a germ-cell and its propagation of a numerous offspring at the cost of a germ-yolk by a series of reiterated spontaneous divisions." "The right and clear comprehension of the object effected by this process is essential to the elucidation of the nature and relations of the subsequent modifications and varieties in the course of development." "The progeny of the primary impregnated germ-cell may be called secondary or derivative impregnated germ-cells." "The progeny of the germ-cell resemble their parent. They are germs of the tissues, and are called 'tissue germs.'" "Not all the progeny of the primary germ-cell are required for the formation of the body in all animals. Certain derivative germ-cells remain unchanged, and become included in that body which has been developed from their combined and metamorphosed brethren. These unoccupied germ-cells increase as we descend the scale of animal life." "The power of propagating by germination and spontaneous fission is in the ratio of the retention of the germ-cells, as such, in the constitution of the individual first developed from the primary germ-mass." "The force is exhausted in proportion to the complexity and living powers of the organism developed from the germ-cell and germ mass."

The meaning of the learned author cannot be mistaken. He has located the power of life, that mystery to man, in certain microscopic points distributed through the tissues, calling them tissue germs, and has urged the fact with such cogent argument, that it is impossible for us to shut our eyes to its truth. He evidently regards the life force as residing in this progeny of the germ-cell, and, by very clear demonstration in the paper referred to, regards the permanent nuclei of tissues or tissue germs as identical with these derivative germ-cells or nuclei.

But, though location is thus given to the germinating germ or life-force, and an *object* given to the curious changes of the developing germ, the exact nature or properties of this germ is yet open to speculation. This is the subject, therefore, which is now more peculiarly agitating the physiological world. The question is an important one; it is this: Are we to call all the processes going on in the body *vital*, or are we to restrict this term to certain powers alone? In other words, are we to regard all the processes going on in the body as the result of a *life force*, or are we to regard certain phenomena as a result of the ordinary physical laws, which would take place *with-*

out a living organism as readily as in it, if placed under similar circumstances. The two most striking views with which I am acquainted are those taught by Drs. Carpenter, of London, and Jackson, of Philadelphia. The former teaches that: All the various organic actions are so many modifications of a single force, acting through various materials. The latter teaches that: The organic force has no other power but that of developing and maintaining typical forms according to a creative idea; and these various forms of mechanism produce certain varied results by favouring the play of external agencies. Dr. C. confounds physical, chemical, and mechanical forces with the organic force. Dr. J. simplifies our idea of the subject by separating these forces from the organic force.

Having thus given a hasty sketch of all the most prominent facts and incidents connected with the history of the cell-theory, I again call attention to the question of priority in giving it birth, or to the propriety of calling Schleiden and Schwann the fathers of this cell-theory. Like all human knowledge, the cell-theory is not the achievement of a stated time or a single individual, but the collective work of years and many individuals. Hook, Malpighi, Brown, Raspail, Schleiden, Schwann, and Owen have each and all done their part, and each may represent the date of some important discovery. It is obvious, therefore, that we are not to determine upon whom to confer the honour of priority in its discovery, but upon whom to confer the honour of having made the most valuable contributions to its doctrines. The question is not as to the priority of doing the whole work, but of doing the largest and most valuable portion of it. In this view, Schleiden and Schwann deserve, as they have received, the most honourable acknowledgments for their valuable observations and discoveries which have contributed more than any other to give form and substance to the shadowy ideas which have generally prevailed upon this subject. With this, I dismiss a subject which cannot fail to interest deeply those who have read with pleasure the past achievements of physiology, and with the eye of speculation have penetrated the veil of the future, and glanced over the rich harvests promised to so youthful and vigorous a science.

ART. IV.—*Case of Double Uterus.* By WILLIAM KELLY, M. D., Physician to Blackwell's Island Hospitals. (With three wood-cuts.)

MARY H., aged thirty-seven, died in this hospital, March 27, 1852, of typhoid fever following delirium tremens. She had been married, and had given birth to three children, but for some time past had been leading a life of intemperance and vice. The post-mortem examination revealed profusion on the part of nature in supplying this woman with the organs of reproduction. She had two uteri, and each uterus was provided with its own cervix, its own os, and its own vagina. There were, however, but two Fallopian tubes, two ovaries, and two round and broad ligaments. Each uterus had its set. Each

uterus had also a single set of spermatic vessels. Of the uteri, the left was normal in size, shape, and color, but was bound with its ovary to the left side of the pelvis, while the right, with its ovary, was bound to the other side—the two joining each other at an angle of seventy-five degrees. The right was half an inch longer than its fellow, more cylindrical and of a deeper colour. It had a small fibrous tumour in its anterior wall.

The os of the right uterus was small and circular; that of the left, larger, cleft, and oblique, and gave indication, as also did the appearance of the uterus itself, that this organ had been impregnated.

The cervices were distinct, but firmly bound together for half an inch from the ora.

The vaginae were each of the ordinary size; were parted by a stout septum, continuous from the vulva where it began in a thick pillar, visible on separation of the labia, and inserted into the space between the ora. Each vagina had evidently had its own hymen. The carunculæ myrtiformes surrounded each of the openings, and occupied each side of the pillar.

The external parts presented nothing unusual except the aforesaid pillar.

The left ovary had a cyst in its anterior walls, of the size of a hickory-nut, and filled with a dark fluid. The right ovary was normal, but bound up with its Fallopian tube and ligaments by adhesions of long standing.

The Fallopian tubes were six and a half inches long; had their origin in each case from the middle of the fundus. In the left, the fimbriated extremities opened in a sort of efflorescence. Dissection discovered the opening of the right tube, and a probe could be passed through each to the body of its uterus.

The round ligament belonging to each uterus was inserted in each case into the fundus, to the left of the tube. This insertion of the round ligament was the only instance of departure from uniformity in the arrangement of any of the corresponding parts.

The accompanying sketches represent the appearance and peculiarities of this organ.

Fig. 1.

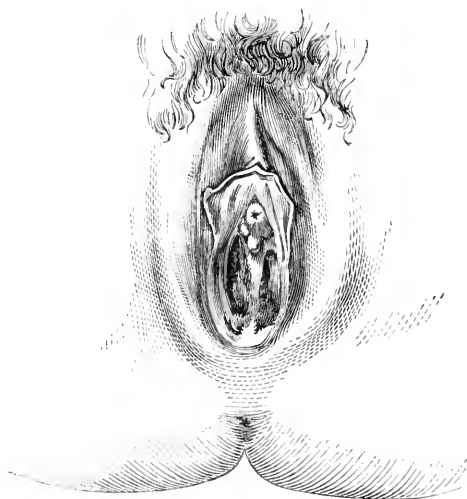


Fig. 1 shows the external parts with the pillar in which the septum, dividing the vagina, terminates.

Fig. 2.

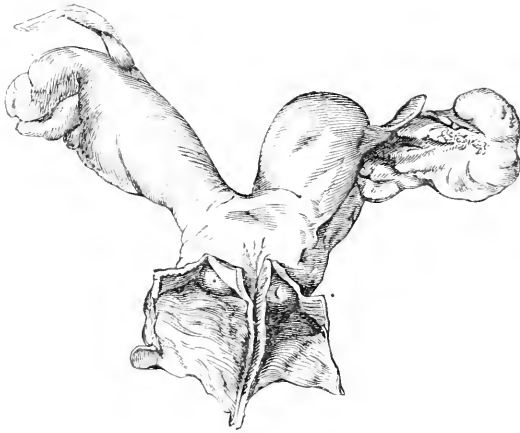


Fig. 2 shows the anterior view of the organ, with the peculiarities of ora, cyst of ovary, tumour in right uterus, and difference, in shape and size, of the two uteri

Fig. 3.

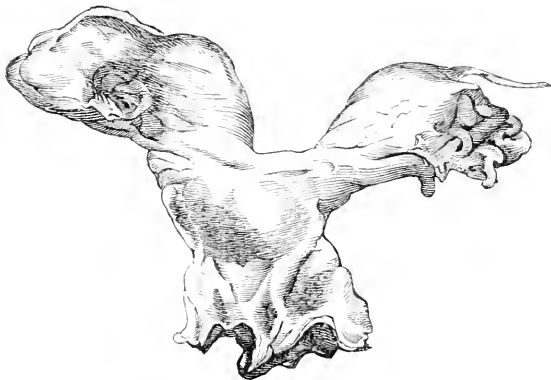


Fig. 3 shows the posterior view of the same, with the convolutions of Fallopian tubes and efflorescence of left fimbriated extremities.

The specimen to which this case relates has been exhibited before the Pathological Society of New York, and will shortly be deposited in the Museum of the College of Physicians and Surgeons. It is, I believe, as complete a double uterus as has ever been described.

Voigtel (*Handbuch der Pathologischen Anatomie*) is the great authority on this subject. He has collected, with much industry, a large number of cases, illustrating the abnormal forms which this organ has at any time assumed. He arranges the cases of plurality in three classes:—

First. Those in which the cavity of the uterus is merely divided by a septum.

Second. Those in which the body is double, but the aperture and vagina are single.

Third. Those in which the uterus, os, and vagina are each double.

Into this latter class, the specimen under consideration will fall. Yet Voigtel seems to think that the term double uterus ought to be applied only to a case in which we have two ovaries, two Fallopian tubes, two broad and round ligaments annexed to each uterus. Such a case has never yet been found. The uterine appendages are always double. Two ovaries are furnished, when a single one, with a single tube to serve it, might have sufficed. Birds have but one ovary. But the rule that nature has adopted with the mammalia is to make these parts of the organs of reproduction double, and she needs but to make the body of the uterus, the cervix, os, and vagina double, and she surely has a double uterus (the word uterus standing here as the representative of the whole apparatus). The first double uterus ever described was, according to Voigtel, given to the public by Cattus; the second, a bifid uterus, by Silvius; the third, also a bifid, by Bohmer.

Eisenman in 1752, A. D., found in a girl, nineteen years of age, a double uterus with a double os and a double vagina, each vagina having its own hymen.

Callisen published an account of a similar case about the year 1775.

Leveling describes, in 1781, a case of bicornous uterus with one cervix and one vagina.

Canastrini, in Hungary, opened a woman who had died in the fourth month of pregnancy, and found two uteri, one six, the other three and a half, inches long. The smaller one descended obliquely, and lost itself in the neck of the other. The fœtus had escaped by an aperture into the hypogastrium.

Count de Trassan, in 1752, related to the French Academy the case of a woman who had had many children, the youngest of which was five years old, and who finally died of some disease of the chest. The body was opened, and the uterus found of the shape that painters usually assign to the heart. There was only one external opening, but two distinct ones within, leading to two organs very complete and well organized. Inspection proved that each had been gravid, but it was impossible to tell which had been so most frequently. Trassan also related the case of a lady who had duly been confined of a healthy child, and experienced the usual sequelæ of confinement for the space of six weeks, when she was suddenly taken again with labour-pains, and gave birth to a living, though meager child, of five months' uterine gestation. The friends of the lady kept the affair a secret till after her death. Trassan explains this case of superfœtation by supposing that the lady had a double uterus.

There is a specimen of double uterus with double os and vagina, preserved in the Anatomical Cabinet at Heidelberg; also another in the Museum of the Royal College of Surgeons, London. One of the uteri in this latter case contains a fœtus at full time.

Voigtel gives reference to other cases of a similar kind, but I will not repeat them.

ART. V.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

April 12.—Fibro-plastic Tumour from the Neck.—Dr. HENRY J. BIGELOW.—This, a fibro-plastic tumour of two years' standing, situated on the front of a young man's neck beneath the platysma, about the size of a pullet's egg, was easily detached without injury to the vessels. Removed, its appearance is lobulated; its colour white; cartilaginous substance in its centre, and some calcareous deposit. These tumours, the exhibitor remarked, were formerly denominated "*glandular*." Often a tumour of this nature actually resembles, under the microscope, the tissue of the glands among or near to which it is seated. In this sense, the term glandular turns out to be really not inappropriate. This tumour showed eminently the secreting crypts of glands.

Encysted Tubercle of the Vertebral Inter-articular Fibro-cartilage.—Dr. G. H. GAY showed the specimen, taken from a dissecting-room subject, fifty years of age or upwards.

No history of the case is known. A vertical section being accidentally made of four or five dorsal vertebræ, the following appearances presented themselves, after washing away the soft, adhering powder produced in sawing, viz., great vascularity of the whole cancellated structure, which was studded with numerous, minute, reddish prominences, at first looking like the gray granulations of one form of commencing tubercle in bone; these were easily washed away by a slight jet of water; the cancelli were firm and hard, in some spots almost eburnated; there was no distinct, softened, infiltrated, or encysted tubercle in the bone, though there were two or three irregular cavities which may have been the seat of tubercular deposit at some anterior period.

Were those reddish prominences the "*granulations grises*" of Nelaton?

The inter-articular fibro-cartilages were all thinner than usual, as if compressed, and all were more or less diseased; their vertebral surface was very vascular, presenting a thin, reddish line completely encircling it, as if to form a cyst; in one, spot there was a cretaceous deposit, of the size of a pea, surrounded with a yellowish, friable, curdy mass, in a cyst; there were other small encysted masses, and one much larger than the rest, the cavity filled by which would easily admit the end of a finger. In this cavity was a yellowish-white substance of a consistence between that of putty and of a chestnut, presenting under the microscope the characteristics of tubercle, slightly decomposed, very friable, and breaking down upon the slightest pressure. This was inclosed in a distinct cyst about two lines thick, its cut surface having a red look, and from the inner, smooth surface of which the tubercle could be easily separated. The cyst and tubercular mass were confined entirely to the cartilage; the articular surface of the body of the vertebra above and below being excavated where the mass pressed, though there did not appear to be any loss of bony matter. In detaching the wall of the cyst and cartilage from the bone, the latter was found quite hard and smooth, approaching eburnation.

Some of the cartilage presented its natural look and firmness. There was a tubercular mass in one lung, *near its base*, as large as a pigeon's egg, somewhat more softened than the above.

Scirrhus Parotid Gland.—Dr. J. MASON WARREN showed the specimen, which had been successfully removed. The patient was a farmer

fifty-two years old. Twenty-five years ago, a tumour made its appearance in front of the ear. This imperceptibly increased, giving him no pain or inconvenience until two months since, when it was injured by a blow, and since then has rapidly increased in size. The night after the blow, he perceived that there was some insensibility in the skin in front of the tumour. For some time past he has been unable to close the right eye. "Now, there is an oval, prominent, even, well-defined tumour in front of the right ear, overlying the ramus of lower jaw, and occupying the position of the parotid gland. Its long axis is parallel with a line drawn from the angle of the jaw to the external angle of the orbit. Its greatest length is three inches, width two inches. Upper margin is on a level with the angle of the eye; lower margin with the angle of the jaw; posterior is overlapped by external ear. Integument is movable; not discoloured. Tumour is of firm consistence; not tender on pressure; not attached to bone, yet but slightly movable. Does not move with lower jaw; cannot be felt in mouth. There is much numbness of cheek in front, and a dull, but not severe pain in the tumour itself." (*Hosp. Record.*)

When the patient entered the Hospital, one or two glands in the neighbourhood of the tumour were enlarged, apparently from the effect of some irritating application he had made for the purpose of discussing it. Under treatment, these with one exception disappeared. He was extremely desirous of having the tumour removed, and on a consultation of the surgeons it was decided that the attempt should be made.

The patient being etherized with chloric ether, an incision was made from just above the superior border of the tumour to a little below its inferior part. This was crossed by another incision commencing at the mastoid process, and terminating on the cheek. The fibrous capsule of the gland was now cut into, and the tumour gradually loosened by dissecting carefully around its circumference. Its adhesions were so close, and the texture so firm that it was found impossible to proceed but with great caution; the vessels that were divided under the edges of the tumour being secured with much difficulty. The tumour was first loosened from its attachment to the zygomatic process, then dissected from the masseter muscle, the transverse facial artery and the parotid duct being cut away at this stage of the dissection. It was next detached from its firm adhesions to the sterno-mastoid muscle and mastoid process, and its adhesions to the ear and the trunk of the facial nerve cut off. Finally, by means of the blade and handle of the knife it was separated, from before backwards, from the great artery and vein which lay imbedded in its posterior wall, the latter being cut and tied. Four or five arteries required ligatures. An enlarged gland in the neighbourhood was removed separately from the tumour.

The mouth was found paralyzed after the operation. The eye which the patient was unable to close before, either in sleep or when awake, was found, a few days subsequent to the removal of the tumour, to drop down so as partially to cover the eyeball when he was asleep.

An examination of the tumour after its removal showed it to be the parotid in a scirrhus state; the microscope disclosing an abundance of cancerous cells; with it was included a lymphatic gland imbedded in its lower and under portions. Dr. W. states that he had once or twice removed tumours from this situation, apparently formed by the above lymphatic gland in a diseased state; the lower edge of the parotid being raised up and spread out on the surface.

The presence of the parotid duct and the facial nerve in the tumour now shown, together with its anatomical relations, left no doubt as to the organ diseased.

Dr. CHARLES E. WARE reported a case of *Intussusception*.—It occurred in a female child ten months old, nursing, but in the habit of feeding more or less. She was perfectly well on Wednesday morning, April 21, and had eaten pretty freely of minced salt fish, while the family were at breakfast. Early in the forenoon, while nursing, she suddenly stopped, was sick at the stomach, and vomited. The vomiting continued, with some indications of general distress, till the afternoon, when an injection was given. It came away without bringing much with it. The vomiting continued through the night, and Dr. W. saw the child at about 9 o'clock the next morning. It had just had a pretty copious discharge of bloody mucus, as the mother said, with some relief to the uneasiness. It was the first discharge of this character which it had had. The longest interval which had been passed without vomiting was about two hours. The matter vomited was greenish liquid. The child had refused the breast from the first; its countenance was pale and sunken. The respiration was hurried, with free action of the abdomen. The skin was quite natural. She would smile and take notice, giving no signs of fractiousness, nor of being in pain. The abdomen was not very tender. Nothing could be discovered by the touch. Pulse 140, of good character. She was put under the influence of Dover's powder, and continued in about the same condition through the day. In the evening, contrary to Dr. W.'s direction, a dose of oil was given which occasioned some distress. The next morning, at 8 o'clock, Dr. W. found her senseless and sinking. Abdomen much more full and tender. Sphincter ani entirely relaxed. Introducing the little finger, the tumour could be reached. She had had several dejections of bloody mucus, and nothing else. The vomiting had continued of the same character. She died at half-past 9 A. M., about forty-eight hours from the commencement.

Autopsy.—There was found an intussusception of a portion of the ileum, of the cæcum, of the ascending colon, and of half the transverse colon into the remainder of the transverse, and of the descending colon—the lowest portion being just twelve inches from the anus. The appendix was just projecting from the invagination, intensely red. The ileum, for several inches above the invagination, was very red and injected; but the rest of the intestines not at all so, nor was the colon below the invagination. There was no trace of peritonitis. There was about a gill of serum in the peritoneum.

Dr. CHARLES E. WARE also reported a case of *Valvular Disease of the Heart*, and exhibited the specimen. He was called, for the first time, April 22, at 11 o'clock P. M., to see a young woman aged 27. She had been in rather feeble health, and subject to palpitation for several years. Never had anything like rheumatism. She had rather a severe asthmatic attack, as it was called, attended by hemoptysis, in the December previous. Dr. W. found her sitting up in bed, livid, breathing like a person in asthma, and complaining of a most distressing palpitation. She had been, through the day and evening, as well as usual, and retired as well as usual. On getting into bed, the palpitation commenced. She had a similar attack about a week previous, which obliged her to sit up half the night. It then occurred after an unusual excitement. Her pulse was now strong, quick, and regular. There was no opportunity for any examination of the chest. She was unable to lie down, and was constantly tossing about in the greatest distress. She constantly hawked, and spit from her mouth, most copiously frothy mucus. The inhalation of sulphuric ether was tried, at first with benefit; but, as she got under the influence of it, with depression, which forbade the continuance

of it. Afterwards, under the influence of chloric ether and elixir of opium, she got relief from the extreme distress, and fell into a disturbed sleep. The violent action of the heart was not entirely checked. At about 4 o'clock in the morning, however, without warning, she suddenly died.

Autopsy.—Great rigidity. Extreme whiteness of the face and lips. Blood quite liquid, but with some coagula in the heart. Not an abnormal amount of serum in the pericardium. Appearance of heart normal. The mitral valves so contracted that they would not admit the little finger. The aortal valves very much thickened, with commencing vegetations. The thickening confined to that portion of the valve which is naturally the thickest. The auricle of the left side very greatly thickened. The left ventricle natural in thickness and character. The right side of the heart normal. The left lung very generally adherent: about eight ounces of fluid in right pleura. Both lungs very œdematous. No signs of tubercle. The bronchia filled with frothy serum. The mucous membrane of the primary bronchia of a deep livid red colour; as it extended into the smaller branches, it became of a natural hue. The right lung was very much condensed, varying in different parts, but quite as much so in the upper as the lower. In a very considerable portion, the lung was perfectly carnified, and admitted no air.

The case presented two points of considerable interest: The character of the pulse. Dr. W. had never felt the patient's pulse previous to the attack of which she died. During the paroxysm, it was of good strength and caliber, and so far as could be judged, when beating so rapidly, regular. This is contrary to the rule in mitral contraction. In a case which he reported to the Society some years since, of which the specimen is in the cabinet, and where the contraction was about the same as in the present specimen, the pulse was never so distinct that it could be counted, although the patient was frequently seen for a long time before her death. He thought it possible that the violent action of the ventricle upon a small supply of blood might, during a paroxysm of palpitation, give unusual strength to the pulse, although he did not remember to have noticed it in the former case. Another point was the condition of the right lung. The patient was as well as usual when she went to bed. There was no reason to suppose that there was any disease existing in the lungs at that time, certainly not of the character and extent which were found after death. And yet in five hours a considerable portion of one lung had become perfectly carnified, having the appearance as if the air had been expelled by disease rather than by compression from without, the effusion into the pleura not being sufficient to have occasioned it.

Sudden Enlargement of the Abdomen during Pregnancy. Death, a few days after.—Dr. CHANNING related the case. Mrs. —, aged 20; married. Was called to see this case in consultation with the attending physician. On reaching the address, Dr. C. learned that, a week before, patient complained of pain in right side of trunk, reaching quite down to and through the pelvis on that side. At times, pain greatly increased, shooting up to right shoulder, side of head, and especially to the eyes. Vision at such times impaired, or lost. He was told that the patient was about four months pregnant. That she had been thought pregnant some months before her present state, and had successfully used the means of procuring abortion. In her present pregnancy had been troubled with vomiting for about two months; but this had ceased three or four weeks ago. She was still taking medicines for abortion, especially those sold by a woman named Restell, and had been taking them at the time of the attack, a week ago. She had been very hot; with very rapid

pulse; intensely flushed; at times delirious; very thirsty. Dr. C. found this history confirmed by seeing the patient. In addition, he found her to be very nearly speechless; that is, she was labouring to speak, but could hardly articulate a word. She obviously wished for something, but, with all her efforts, could not make her wants known. Swallowing was nearly impossible; violent choking and suffocation attended any attempt at deglutition. It did not seem that anything passed into the œsophagus. Tongue dark brown, dry, rough, cracked. The face was of the deepest crimson; eyes brilliant; skin hot. Pulse between 150 and 160; of sufficient strength. She was very restless. Respiratory sounds, or those accompanying breathing, were stertorous, resembling the dry, husky, shrill breathing of croup or laryngitis.

Examination of the abdomen furnished very interesting results. The abdomen was filled and distended by a large tumour, as hard, nay harder than is the impregnated womb. Flat on percussion, and without fluctuation. Tender on pressure. Auscultation discovered neither the placental murmur, or *bruit*, nor the sound of the fetal heart. Dr. Channing had not heard of this uterine or abdominal distension, nor of the suddenness of its occurrence. He inquired concerning these points, and learned that, previous to Friday last, a week ago, Mrs. — was no larger than is usual at the fourth or fifth month. That, being down stairs, she told a friend of the sudden increase of size, and begged her to feel the abdomen. As she had never detected any fulness before, the present state of things struck her as very extraordinary. Her physician had seen her on Friday, before an attack of the pains in the abdomen, and elsewhere, as above described; but was sure that her size was then natural. He, however, had not stated that she had so suddenly increased in bulk.

Examination per vaginam.—This showed the vagina to be entirely empty. Its *cul-de-sac* was drawn up almost out of reach, and felt to be forcibly on the stretch. Os uteri could not be reached. It was at once inferred that, in the rapid growth of the womb (for the distension of the abdomen could not be well explained without referring it to enlarged womb), it had risen strongly into the abdominal cavity, and had dragged up with it its vaginal connections.

The question now arose, upon what this sudden enlargement of the womb depended. At first, it was asked if it did not depend upon *internal uterine hemorrhage*. Dr. C. had been called to a case of this kind occurring at a late period of pregnancy. Death had occurred before he reached the address, and this was only about ten hours after the first symptoms of uterine trouble were manifested. These were agonizing uterine pain, violent jactitation, paleness, faintness, sunken pulse, coldness, increased fulness and tenderness of abdomen, &c.—to ordinary symptoms of great hemorrhage. Examination discovered the womb to be full of blood; the placenta and membranes everywhere detached from the womb, and an eight months' child in its cavity. In none of its symptoms did the present case resemble that just briefly described.

The whole situation of the patient was so critical, and the extreme difficulty of deglutition so great, every attempt apparently threatening death, that it was pretty obvious she could survive but for a few hours only. Dr. C. learned, early in the morning following his visit, that Mrs. — died at 8 o'clock the evening before, and about four hours after he left her house.

Autopsy, twenty hours after death.—External appearance and state, striking. The face, especially the cheeks, which had been intensely red the day before, retained their colour perfectly. The blush was so distinct that it seemed impossible that life had departed. The limbs were, however, perfectly rigid.

Sugillations existed in all their usual situations—neck, back, axillæ, &c. &c.; the whole state, in short, showing the questionless presence of death. The abdominal tumour was softer than before death, and had somewhat subsided.

Upon opening the abdomen, the womb was found reaching from the symphysis pubis to the epigastrium, and filling out fully the sides of the abdominal cavity. It was mottled, or rather streaked with dark, livid markings, which have never been before met with by Dr. C., and looking as if its cavity were filled with a dark fluid. The surface was perfectly smooth, and without any marks of inflammation of its peritoneal cavity. Upon raising the womb, the Fallopian tubes were found pairing off from its sides midway of the organ, precisely as happens to them at the close of pregnancy. The ovaries presented a very singular appearance. Upon raising the womb, they were seen hanging at its sides about five inches in length, and very closely resembling in shape the enlarged kidney, having the narrowing or depression of that organ at the pelvis. The ovaries were filled with a fluid in cysts. It did not resemble the ordinary oily fluid of ovarian dropsy. On the contrary, it exactly resembled water. The ovaries were distended with this liquid, and so weak were the cysts that they broke and discharged their contents on very slight pressure, or careless handling.

Upon opening the cavity of the womb, about four quarts of perfectly colourless fluid flowed out. At the close of the discharge, some blood appeared. This had probably been effused recently, or during the examination, as the water was not in the least coloured by blood. A fœtus was seen in the lower part of the womb in its membranes, and being removed, another fœtus was discovered still lower in the external cavity. Both were males, and the first seen was much larger than the other. The cords passed downwards, and were found springing from a single placenta, situated over the os uteri, and attached to its neck. The placenta was easily detached, being softened almost to the state of grumous blood. The decidua was very distinct in patches; but generally it was found separated from the uterine surface. The substance of the womb was about four lines in thickness, and seemed watery. There was no effusion into the peritoneal cavity. There was no other disease discovered.

Remarks.—The distinguishing fact in this case is the rapid increase in the size of the abdomen. It occurred almost in a day. It had been preceded by pains, and weakness, loss of appetite, great heat, rapid pulse. But the medical attendant felt sure that, up to the time above spoken of, one week before my visit, he had discovered no increased size. The question occurred, to what this rapid formation of fluid was owing; what was its source? Dr. Channing supposes it to have been secreted by the womb, and that it was collected between it and the membranes. He thinks the preceding symptoms show this, and that no case of excessive *liquor amnii*, in his recollection, presents such symptoms. In this last disease, the fluid collects slowly, and becomes a cause of trouble and distress by the over-distension accompanying it. Then, again, Dr. C. said, the very unusual state of the ovaries favoured strongly the doctrine that the fluid in the womb was directly produced from the organ itself, and not from one of the fœtal membranes. The ovaries were both of them very large, the right the larger, as was the fœtus in the right part of the womb much larger than the left one. This size was owing entirely to serous effusion into, and distension of the ovarian vesicles, as before stated. Dr. C. thought it was highly probable that the disease of the ovaries began at the same time with that of the uterus.

Of the treatment.—It was pretty clear on Friday, as Dr. C. remarked,

that treatment was out of the question, it being obvious that life, under such circumstances, could not be sustained much longer. It was proposed to puncture the membranes. But, in the first place, the os uteri could not be reached; and in the second, death would probably have been chiefly incident to the operation, so near to death was Mrs. — at Dr. C.'s visit. The *autopsy* showed what was the situation of the placenta. Hemorrhage must have been the result of the operation above referred to.

From the whole history of the case, is it not probable that it was produced by the various measures which had been adopted to procure abortion? Others were referred to besides those above named, and doubtless together they produced the arterial disturbance, and ultimately the disease which ended in death.

Fibro-plastic Infiltration of the Skin.—Dr. HENRY J. BIGELOW showed the specimen, a piece of the skin of a female breast, as large as the palm of the hand, studded with cancerous-looking tubercles. The microscope declared their non-malignant character. The mass had been extirpated at the age of 10, 27, and now again for the third time, by Dr. B., the patient being 47 years old.

Fibro-plastic Tumour in the Parotid Gland.—Dr. HENRY J. BIGELOW exhibited a tumour of the size of a small billiard ball, removed from the parotid of a female. Tumour of twenty years' standing; very friable and granular. It lay deep behind the angle of the jaw upon the styloid process, and under the sterno-mastoid muscle.

Deafness, nearly total, following Sumatra Fever. Recovery ten months after. Reported by Dr. BETHUNE.—A gentleman, 30 years old, consulted Dr. B. on December 19, 1851. His health was generally good. Seven months before, he had fever in Sumatra, and on recovery found himself nearly wholly deaf, in which state he continued up to the time Dr. B. saw him. At that time he could hardly be made to hear anything. Tinnitus formerly, now none. No pain. He suffers much from cold in the ears and back of neck. On examination, meati wholly destitute of cerumen. Tympana somewhat opaque. He was ordered tr. iodini to mastoid processes; to be repeated every three to five days, according to the amount of irritation produced, and to take internally tr. hyd. cymur. gr. one-sixteenth, three times a-day, gradually increased. (He had had leeches and blisters without relief.)

At the end of eighteen days he had somewhat improved in hearing, and soon after reported a further improvement, and a diminution of the cold feeling. Feb. 5. Still improving, cerumen now abundant. He continued his treatment till the sublimate was increased to about one-fourth gr. three times a-day; being followed by tenderness, with pain in abdomen, and slight soreness of gums, it was intermitted for a few days and again resumed. The last time Dr. B. saw him, he could hear with ease common conversation addressed to him, and in church could nearly follow the clergyman throughout the service and sermon. The wax has become so redundant as on two occasions to require removal.

Dr. STORER referred to a case reported by him some months since, of a woman at the hospital, who had severe cerebral symptoms which were relieved by mercury [see *Extracts*, pp. 199, 200].—Dr. S. stated that

she left the hospital some time after he reported her case, and was carried to Deer Island, where she remained for a considerable time, when all the bad symptoms returned which were manifested while she was at the hospital; and she died a week or two since. Upon *post-mortem* examination, the vessels of the brain were found very much congested; and the portion of the right frontal bone where the node had existed was thickened to a great extent. It has been ascertained that, years since, she suffered from syphilis.

May 10.—Curvature of the Lower Extremities.—Dr. J. B. S. JACKSON mentioned a case of this deformity, which he first saw three years since. The child was then very bandy-legged; some mechanical supports were worn for a while, but, being found cumbrous, were thrown aside. The limbs began to bend when the child began to walk, and the curvature was greatest at the age of two and a half to three years; both lower extremities bowed throughout. Yesterday Dr. J. again saw the child, and found the limbs *perfectly straight*; the child walking as well as any child.

Dr. HENRY J. BIGELOW said that he supposed nine cases out of ten got well of themselves. He alluded to Guérin's treatment of a certain case, a female patient, taken to him by Dr. B. No mechanical support was employed; invigorating means to the system in general; the seaside; frictions; continual use of a half and half mixture of claret and water. Cure.

Dr. COALE asked if it be not true that nature nearly always repairs such deformities? He referred to the deformity sometimes observed in infants, the head being distorted by continually nursing at one breast; the head recovers its shape again.

Dr. JACKSON said that the heads of adults are often unsymmetrical. The Germans, from a peculiarity in their tending, while children, get the occiput flattened. Dr. J. also spoke of a case of flattening of the occiput as a consequence of scrofulous disease in the cervical vertebræ, it being necessary to place the child constantly on its back.

In answer to a question from Dr. Jackson, as to the treatment of curved limbs, &c., Dr. BUCKMINSTER BROWN made the following remarks: In the cases referred to by Dr. Jackson (*genu extrorsum*), there is much weakness of the ligaments of the knee-joint, and the bones are likewise generally implicated. These cases will sometimes completely recover by merely strengthening the general system; but those more formidable cases, in which the curve is very marked, involving both the tibia and fibula, and commencing about three inches above the ankle, are probably never cured without surgical treatment. Dr. Brown mentioned an operation which he had seen performed in Paris, which consisted in straightening the limb instantaneously, by a process of gentle but forcible traction; producing, in certain cases, what may be termed a sub-fracture, or, as the French term it, "*fracture lamellaire interstitielle*;" in other cases, the softened bone is simply moulded into its proper shape, the hands of the operator being the only instrument employed.

The periosteum in either case is left uninjured. The limb afterwards receives appropriate support by splints, &c. This operation has been done under the authority of, and the cures authenticated by, a number of the most distinguished French surgeons. MM. Louis, Dubois, Blandin, Jobert, Rayer, Serres, and Orfila have given it their unqualified support.

Dr. B. said that this operation is applicable to certain cases only, and in these it offers a valuable addition to our means of removing this deformity. It is not followed by inflammation, constitutional irritation, or by any injury to the general health; and there is apparently less pain attendant upon it

than accompanies the division of a tendon, or any of the minor operations in surgery.

Dr. B. likewise stated that the apparatus which had been found most useful (in cases where no operation was admissible, or where, from the debility of the subject, or from any other cause, the surgeon does not feel authorized to run the risk of leaving the result to unassisted nature) consists of a steel spring applied to the concavity of the affected limb, taking for its points of support the internal malleolus and the internal condyle and tuberosity of the femur. Lateral straps extending from this spring grasp the convexity of the curve, and tend constantly to draw the growing bone towards the said spring, and to give that support which is here so strongly indicated.

This is a very efficient instrument, and its importance will be readily appreciated in the cases under consideration, if the disadvantages to which the feeble limbs are subjected be duly considered, the weight of the body causing the limbs to bend, and so an indefinite increase of the distortion becoming imminent. The hygienic treatment already mentioned, country air, wholesome food, and tonics, if deemed necessary, are important as auxiliaries.

Dr. BETHUNE asked, if recurrence of the curvature is likely to happen after the above mode of straightening and treatment?

Dr. Brown replied that the support is to be continued until the system seems sufficiently strong to warrant trusting to its powers alone. Recurrence is not likely.

Dr. INCHES spoke of the effect of bad diet, and of diet improper to the age of children; these are often the causes of this sort of deformity. After the above operation, a proper diet confirms the cure. Rachitis, remarked Dr. I., nearly always exists in these cases. He had observed curvature, of the nature above referred to, of the forearm, and it was treated in the manner mentioned by Dr. Brown.

Dr. W. E. TOWNSEND had seen, in a very healthy situation, near the White Mountains of New Hampshire, a family, *all* the children in which were unable to stand upright; the limbs were curved and rachitic; the bones breaking frequently. In this instance, which is a remarkable one, the state of the system could not have arisen from deprivation of light and air, mentioned as a cause by some members of the Society.

Hemorrhage from the Mouth and Anus in a newly-born Child.—Dr. COALE reported the case. The child, born on Friday last, was, to all appearance, well; the parents healthy. The day after birth, Dr. C. noticed some coagulated blood in its mouth. In the evening of the same day, it vomited much fresh blood, saturating two towels. R.—Acidi sulphurici aromatici; guttam unam. Repeat every two hours. Next day, appearances more favourable. The blood was voided by the mouth and by the anus. On the third day, the hemorrhage having ceased, there was substituted for the acid, sulphate of iron, in the dose of one-sixth of a grain, in solution, every three hours. This was continued for three days, gradually increasing the interval between the doses. The child, which Dr. C. supposed could not recover, is now four weeks old, and quite hearty. Dr. C. remarked that he knew of no case where such an amount of bleeding, at such an age, had not proved fatal. The effect of the astringents employed was apparently very marked. The cord was not hastily tied in this case. Dr. C. mentioned this, because injurious results, from tying the funis before the cessation of pulsation, have lately been spoken of, by Dr. Storer, before the Society. The blood was supposed, by Dr. C., not to have come wholly from the stomach. When

thrown off, it was very fresh; and that passed from the bowels was but little changed. There was no bleeding from the cord.

Dr. JACKSON referred to a case of very extensive pulmonary apoplexy, recorded in the Catalogue of the Society's Cabinet; he thought it possible that, in this case, there might have been some such trouble.

Dr. COALE said there was nothing to indicate it, that he observed.

Rheumatism: Peculiarity in its Course.—Dr. C. E. WARE mentioned the case of a woman, fifty years of age, first seen by him, for the present attack, two weeks since. Symptoms—fever, chills, pain in left side. Physical signs—extensive dullness on percussion over cardiac region, souffle with the second sound of the heart. On the second day, the right hand became painful; cardiac symptoms abated; on the third day the left hand was attacked, and also the left knee; cardiac symptoms still more relieved. Two days since, severe pain came on in the right side; strong suberepitan râle over the right lung, and at the base of the left lung; great dyspnœa; bronchial respiration at the base of the left lung; the rheumatic pain in the left hand and knee diminished. Yesterday, suddenly, rheumatic pain attacked the right wrist, the pulmonary symptoms subsiding. Condition the same to-day.

Typhlo-enteritis.—Dr. W. E. TOWNSEND related the case. The patient was a man, thirty-four years old, stout and fleshy, intemperate in eating, but perfectly temperate in drinking. He was attended by Dr. S. D. Townsend for the present illness, which came on with violent pain in the region of the cæcum, on Wednesday last. He took, of his own accord, pil. cochiae, grs. xv, but there was increase of the pain. Dr. Townsend prescribed three grains of calomel, with some opium; in the afternoon he also took senna; there was continual, great increase of the pain; a small injection procured a slight discharge from the bowels. Next day he ejected from the mouth a fluid resembling senna in appearance. Nothing medicinal taken but sulphate of morphia. Death occurred on Sunday morning last.

Patient has had similar attacks about every six months, for the last four years; which generally were relieved by pil. cochiae.

Post-mortem examination disclosed slight peritoneal inflammation around the cæcum; the appendix cæci greatly diseased, and a communication through the appendix into an abscess just external to the intestine. Intestine perfectly pervious.

Dr. JACKSON remarked that there was no foreign body in the appendix, in this case, as is usually found. He added that it is difficult to account for so great an amount of inflammation in the absence of a foreign body; the latter may be lost through the perforation in such cases, passing into the cavity of the abscess. In this instance, the appendix was obliterated near to the cæcum; up to the line of obliteration, it was quite healthy; where diseased, the parietes were greatly thickened, and gangrene seemed threatening. The abscess just external to the appendix is very nearly constant in these cases. Dr. J. added that it is a very curious fact that, the intestines being found so free from any obstruction, the symptoms of stoppage should be so very marked.

Dr. Townsend, Jr., said that the case had been supposed to be one of intussusception. He added that the fat on the linea alba measured from one and a half to two inches in thickness.

May 24.—Encephaloid Disease of the Head and Face.—An account of the case was read by Dr. PERRY. I. H., aged five years and seven months, hav-

ing previously had perfect health, and without any predisposition to malignant disease, was affected about the middle of December last with a swelling near the angle of the lower jaw, on the right side. When it was discovered, his parents supposed it arose from a carious tooth, and took him to a physician in the neighbourhood, who extracted the back molar tooth. The swelling, however, continued to increase; and on the 15th of February, two months after the commencement of the disease, Dr. P. saw him. He was looking rather pale, but otherwise seemed in good health; appetite good; bowels regular; pulse 80; respiratory functions normal; complained of no pain. The swelling at this time was perhaps half the size of a hen's egg, quite elastic to the touch, and not painful on pressure; subsequently, it continued constantly to increase in size, until it occupied the whole of the right cheek, pressing the soft parts into the mouth, separating the jaws, and at last preventing the child from taking anything but liquid food. About three weeks before his death, which took place on the 18th of this month, ulceration commenced on the inside of the cheek, which freely discharged a bloody, offensive fluid. Early in March, a swelling appeared under the left eye, and soon after, another came back of the left ear, and one near the angle of the lower jaw on the left side. The last two did not increase much in size, but the one under the eye pressed up the lower lid so as completely to close the eye.

The veins over the entire surface of each of these swellings were enlarged, but the skin was pale like the rest of the body. About the time the swelling commenced on the left side, the head began to assume an elongated appearance, and before death, the frontal and parietal bones were separated several lines. A few days before death, the measurement from the point of the tumour on the right side, to the occiput, was eleven and a half inches. Some weeks before his death he lost his sight, and partially his hearing. The other senses he retained to the last. Through the whole course of the disease, until within twenty-four hours of his death, when he became delirious, he retained his intellectual faculties, and all the functions went on well, except nutrition. He died anemic. He complained of no pain; his appetite was good; for the most part of the time he slept well; the bowels were regular; the urinary secretion healthy and abundant. He was seen by Drs. Warren, Bigelow, Storer, Jackson, and Clarke.

The *post-mortem* examination was made by Dr. J. B. S. JACKSON, who stated the following appearances to the Society:—

The head was first examined. Dr. J. compared the diseased mass to blood recently effused and coagulated; in some portions, fibrin was observed. The mass extended above the zygoma; the same disease existed in the dura mater; over the vertex, the membrane, for a space of two inches, was lost in the diseased mass; the inner walls of the cranial bones were eroded in spots; the frontal bone was separated from the parietals and from the sphenoid. On the left side there was a sanguineous tumour of the dura mater. The brain was healthy; also the other organs, except the kidneys, which were extensively and deeply ecchymosed. One of the kidneys was exhibited by Dr. Jackson, and a drawing of one of them by Dr. Perry. Also drawings of the child's head and face, both front and profile view, were shown by Dr. P.

Dr. HENRY J. BIGELOW thought the principal points seemed to be the absence of white tissue in the diseased mass; the lack of appearances peculiar to encephaloid; also, the lesion of the kidney was not mere ecchymosis, there was actual disease; the coagulum-like matter was more cellular than bloody; what light-coloured material existed was slightly fibroid, but chiefly cellular;

the cells had much the appearance of pus-cells. Dr. B. showed drawings of the cells; he added that the constitutional character of the disease was sufficient to establish its cancerous nature.

Dr. BACON remarked that the portion of the diseased mass examined by him was so injured by decomposition, that he could not be positive as to the nature of the cells; he, however, supposed them to be cancerous.

June 14.—Fatal Hemorrhage from the Funis.—Dr. STORER reported the case. Dr. S. was called, May 23, at 10 P. M., to Mrs. T——, in labour with her fourth child. In an hour she was delivered of a fine, large, healthy-looking child, weighing about eight pounds. The funis was tied with a piece of narrow bobbin. After seeing the swathe applied and the patient comfortable, Dr. S. left her. At about five the next morning he was called to see the child, which was bleeding from the funis; found it pallid, cold, the pulse scarcely perceptible. Efforts were made to revive it, but it died in a few minutes after Dr. S. reached the house. The ligature applied just after birth was still upon the funis, and at the extremity of the funis was a coagulum. The greater portion of the funis was of a bright arterial colour.

After the birth of the child, Dr. S. waited, as is his custom, for the pulsations of the cord to cease, and then applied the ligature with the usual force, examining to see if the bleeding was stopped; and again, after the expiration of fifteen or twenty minutes, after the mother had been swathed, he looked, as he invariably does before leaving the chamber, at the funis. It did not bleed. It appears, from the remarks of the nurse, that the child was applied to the breast in about one hour after Dr. S. left. No bleeding was then noticed, and the child readily took the nipple. Between four and five in the morning, four or five hours after birth, its clothes were found saturated with blood, and Dr. S. was sent for. That the ligature was applied with as much care as is usually taken, Dr. S. is certain. The fact of there being no bleeding at the end of nearly half an hour after the funis had been tied shows this to have been the case. The bleeding seemed to be produced by the gradual contraction of the parietes of the funis, by which the ligature became loosened.

Does not the result of this case prove that it is well in *all cases* to wait until the pulsation ceases in the funis, before applying the ligature? This was done here, and the case was fatal. Would not this accident be more likely to occur if this caution were not observed? Dr. Storer added that he remembered hearing one of our oldest practitioners relate a case to this Society, in which the ligature having been applied, the funis was severed next the child, *within the ligature*, no bad consequences ensuing. The absurdity of such a practice ever being justifiable is strikingly shown by the case above recorded.

The child was examined, *post-mortem*, by Dr. Jackson, who found nothing abnormal.

Dr. TOWNSEND, Jun., reported a case in which the bleeding, which occurred a few hours after birth, and which was quite profuse, ceased spontaneously.

Dr. JACKSON supposed the bleeding, in the case narrated by Dr. Storer, to have been from the umbilical vein, as this vessel was found open while the arteries were shrunk.

Puerperal Convulsions; Premature Labour.—Dr. STORER reported the case. May 27, visited Mrs. H., at the request of her physician. Saw her at 5 P. M. She was, at that moment, struggling with an epileptic convulsion, which lasted about three minutes. She had had, since one o'clock in the morning, twenty-eight similar attacks. Upon examining the case, Dr.

S. found she was twenty years of age, and this was her first pregnancy. She expected in a week or two to have terminated her time. The attending physician bled her, and made cold applications to the head without relief. She had had slight pains, and upon examining the os uteri it was found to be sufficiently open to reach, with an effort, the unbroken bag of waters. Dr. S. advised puncturing the membranes, which was readily accomplished. After the waters had passed off, and the pressure was partially removed, the convulsions were less severe; and, for an hour previous to her delivery, none occurred. At 8 o'clock, about three hours after, her child was thrown off, still. She soon became comatose and died.

Bleeding and the anæsthetics have so often failed of success in puerperal convulsions, that Dr. S. was induced (recalling a case of this kind occurring in his own practice two or three years since) to suggest the above course of treatment, and he cannot refrain from thinking that, had it been adopted earlier, the result might have been different.

Abnormal Presentation of the Fetus.—Dr. STORER reported the case. The presenting parts were the two hands, and between them the right foot. The patient lived out of town; had had five children; at each accouchement, she had been attended by a midwife; her labours had been natural. Dr. S. was called to see her at 10 o'clock P. M., on the 29th of May. She had been in labour since the morning of the day preceding. Two midwives were in attendance; one had been with the patient since the commencement of the labour, the other during the second day. On Dr. Storer's arrival, he found the patient not much exhausted nor depressed in spirits; on examination, Dr. S. discovered that the mouth of the uterus would allow two fingers to pass readily, and a third when the three were drawn together with some effort. After some difficulty, Dr. S. made out the presentation of the hands and one foot in conjunction; he had never before met with such a case. The contractions of the uterus were strong, rendering the examination difficult and tedious. A loop of the funis hung from the vagina, having presented, according to the attendants, since the passage of the waters, more than thirty-six hours previously. The child was dead; how should it be delivered? The head could not be reached by the forceps or crotchet; an arm might be drawn down, and the case left to the chance of spontaneous evolution; or, when down, the arm might be amputated and the fœtus eviscerated. Dr. S., however, preferred to turn and deliver by the feet; accordingly, by the aid of ether having effected some relaxation of the uterus, he commenced his operations. The right foot, compressed between the two hands, presented at the brim with the toes towards the abdomen of the mother. Finding it impossible to bring down the presenting foot, from its being so firmly wedged between the two other members, Dr. S., after a long trial, succeeded in pushing aside a hand and then the arm, which gave opportunity to search for the other foot; this being found, after long-continued effort, high up in the pelvis, on the left side of the uterus, was brought down; and, while in process of descending, the child rotated and both feet presented at the vulva, with the toes towards the pubis of the mother. After the birth of the body, the head was readily disengaged by raising the abdomen of the child upwards towards that of the mother, causing the occiput to travel over the sacrum. While endeavouring to bring down the second leg, the presenting foot was kept in place by a fillet over the ankle. The whole operation occupied a little more than an hour; in half an hour after removing the child, the patient was left comfortable.

In relation to this case, Dr. S. remarked that, had the child been living, it

would have been proper to have brought down, if practicable, but one foot; the superior bulk of the breech and thigh acting much better than a single limb in effecting dilatation of the parts, and in thus facilitating the progress of the head. Dr. S., while mentioning never having seen such a case, stated that none similar to it had been noted by Dr. Lee, in over one hundred cases of preternatural labour; although a case is mentioned by Madame Boivin, in which all the four extremities presented; and he intimated that such a presentation might possibly have been produced by some other power than that of nature.

Dr. STORER also related the following case of *Placenta Prævia; Death from Exhaustion*.—On the 26th of May, at 6 P.M., he was called to see the patient in consultation. The attending physician had been summoned several hours previously on account of a sudden hemorrhage, which occurred while the patient was sitting upon a cabinet. Cold was applied, and the vagina was plugged; blood still flowed in small quantity, till the patient became enfeebled, and it was estimated that about one gallon of blood had been lost. Dr. S. was now called, and advised, as the placenta was found to cover the os uteri, its immediate detachment. This was effected, and the hemorrhage ceased. Dr. S. advised, additionally, that the patient be watched, and that no attempt be made to deliver; he was called again at 4 o'clock the next morning: the head had now descended into the pelvis, but the expulsive efforts were feeble, and the child was delivered by the forceps. The patient remained comfortable for two or three days, when she began to sink, and died on the eighth day after delivery. Dr. S. was of opinion that, as nothing could have been done in the outset to hasten delivery, from the unrelaxed state of the os uteri, death was, probably, delayed by the non-interference.

Hemorrhage from the Funis on the Second and Third Days after Birth.—Dr. SNOW related the case: He was sent for on the second day after birth, some hemorrhage having occurred, and he then applied a new ligature, supposing the bleeding to be from the cut end of the cord. He was again summoned the following night, the hemorrhage still continuing; a third ligature was applied. On the next day, the child appeared to be dying; and, on removing all the cloths, the blood was found to proceed from around the base of the cord. The nurse had removed the dressing from the funis on the day after birth, which Dr. S. thought might have caused the accident.

In reply to a question by Dr. Minot, Dr. Snow remarked that there was no yellowness of complexion, nor anything peculiar in the external appearance of the child, which died on the fourth day.

Occasional Effects of the Local External Application of Medicinal Agents.—Dr. BETHUNE reported three cases in which these effects were quite marked. The first was one in which atropine was the remedy used; its strength, grs. iij to ʒj of alcohol. This was twice applied to the eyes of an old gentleman; it caused pain in the part, and, subsequently, delirium, which was so violent that the patient threw himself out of bed, bruising his face. The second instance was a case in which the same preparation was employed on a child seven or eight years old; its effect being to produce sleep which continued for thirty-six hours. The third was that of a physician, Dr. B. prescribed the application of croton oil, together with the ammonia liniment, in the proportion of ʒj of the former to ʒj of the latter, for some trouble in the ear; it was directed to be applied over and about the mastoid process;

about half a teaspoonful of the preparation was rubbed in at a time, producing, after the first application, two or three discharges from the bowels.

Dr. ABBOT reported a case of very free application of croton oil. A gentleman having mistaken a bottle of this substance for hair oil, anointed his head quite thoroughly with it, rubbing it in. In a short time, the whole face became extremely red, the eyes were also red and painful, causing much distress; each hair-bulb seemed inflamed; relief was afforded by an opiate; about a teaspoonful of the oil was applied; the bowels were not affected.

Dr. STEDMAN remarked that he had ordered the application of this article as a counter-irritant to different parts of the body, particularly the chest and abdomen, in numerous instances, without fearing or having met with its effects on the bowels.

Dr. BETHUNE said he had never remarked such effects before, although he had used the croton oil in several hundred cases.

Dr. SNOW mentioned a case wherein the patient, having been directed to apply the oil for pains in the chest, *anointed the entire chest* with it. Much inflammation of the skin followed, causing great agony; but there was no cathartic effect.

At the meeting next succeeding the above (June 28), Dr. STORER related the case of a patient who, having applied croton oil to the epigastrium, experienced very powerful catharsis therefrom.

Dr. JACKSON mentioned an instance where fourteen drops, applied to the chest for pulmonary trouble, caused a plentiful eruption without any cathartic action.

Dr. PUTNAM alluded to a case in which its application was not followed by catharsis.

[The cases in which catharsis immediately succeeds the application of croton oil to the skin by friction are, of course, acknowledged exceptions, and, as such, the more worthy of record wherever the effect can reasonably be predicated of the cause. Wood and Bache, referring to the *Dictionnaire des Drogues*, state its *dictum*, that "four drops, applied by friction around the umbilicus, will produce a purgative effect." It would seem far more likely that such effects should be caused by the application of the substance to the epigastric and abdominal regions than when it is used upon other parts more remote from the intestinal canal. Andral, in his experiments made at La Pitié, in 1831 and 1832, and afterwards reported by Joret, found no cathartic effect strictly traceable to the oil, applied by friction; in six cases where friction over the abdomen was made with a mixture of the croton oil with that of sweet almonds, there was no purgative action. Among nine cases in which the *pure* croton oil was used, a single patient was purged; twenty drops were often used. Andral concluded that, very probably, the purgation observed in the single instance mentioned was owing to some inappreciable cause (*Vide* Troussseau et Pidoux, *Traité de Thérapeutique*, etc., tome i. pp. 685, 686). Rayer states that he procured numerous alvine evacuations by the application of one or two drops of the oil upon a surface denuded of cuticle by a blister.—*Secretary.*]

Microscopic Anatomy of the Fetus.—Dr. DURKEE exhibited some beautifully prepared specimens from the fetal subject, arranged by himself with great care and skill for the microscope, and showing the villi and mucous follicles of the stomach and small intestines; the appendix vermiformis; mucous surface of the trachea and œsophagus; sections of the kidney, showing the stellate distribution of the bloodvessels upon the surface, and the

veins distributed in sets in the tubular portion; sections of the thyroid, thymus, and mesenteric glands; the pancreas and lungs; also a portion of the choroid coat having the venæ vorticossæ and pigment-cells injected, and being distinctly shown both by transmitted and reflected light. Dr. D. likewise showed some specimens of the skin from an adult subject, wherein the looplike arrangement of the capillaries which are sent to the papillæ was very manifest; this is to be seen to good advantage in the palm of the hand and under the nails.

Dr. JACKSON stated that the foetus from which the above specimens were obtained was taken from a woman aged forty-two years, after her death, and who was supposed to have died of an abdominal tumour. The real cause of her death was not, however, disclosed by a *post-mortem* examination. She had been in labour two days, unknown to the family, when she was attacked by convulsions at 10 o'clock in the evening, and died next day at 5 o'clock A. M. The probable cause of death was effusion into the brain.

Dr. J. showed the ossicula of the foetal ear, consisting of three bones, the incus and orbicular being united and forming one, as is usually the case, *except in the fetus*, where, it is said, these two bones are detached. Dr. J., however, had seen one case previously, where, in the foetal state, these bones were united.

June 28.—*Ventral Hysterocèle*.—Dr. STORER reported the case. June 2. Three weeks since, Dr. S. visited Mrs. W——, Pleasant Street, who expected to be confined in a few weeks. Upon inquiry being made, it was ascertained that the present is her third pregnancy. The *first* labour was tedious, and her child was stillborn. In her *second* pregnancy, she was delivered at the eighth month, and her child had been dead sufficiently long to have become offensive to the bystanders. Since her last delivery, which occurred about a year since, her health had been poor. She is now quite languid, pallid, evidently much depressed; thinks she never can have a living child.

Upon examining her abdomen, Dr. S. noticed a very singular condition of the recti muscles, which were separated so extensively from each other that there existed a peculiar sacculated appearance of the abdomen, which was strikingly marked upon any forward motion being made by the patient. This separation was observed along the whole extent of the linea alba. The projection between the recti muscles resembled that produced oftentimes by an enlarged ovary; and the feeling transmitted by examining the hernia was similar to that of an exaggerated fontanelle, and beneath the finger the number of the several extremities of the foetus could be defined as clearly as if a rupture of the uterus existed.

The foetal heart was feebly pulsating. At the expiration of a week, Dr. S. again saw the patient. She was exceedingly depressed, and remarked that she had not felt the motion of the child since Dr. S. examined her. Upon a repetition of the examination, no foetal pulsation could be heard, and it was concluded that the child must be dead. Dr. Putnam, to whom Dr. S. had spoken of this, to him singular abdominal hernia, saw her a day or two afterwards.

Now, June 2, patient is in labour. During each uterine contraction, the organ was thrust between the recti muscles with great force; and, fearing that serious results might follow, Dr. S. applied a broad swathe around the abdomen. The labour continued only about two hours, and the patient did not suffer unusually. The child was *still*, and exhibited large patches upon its surface, where the cuticle was entirely denuded. The condition of the *placenta*, which

was quite small, indurated throughout, and exhibiting upon its foetal surface two large cysts, each of the size of a chestnut, filled with coagula, readily accounted for the death.

Patient does not remember that any similar condition of the abdomen existed in either of her former pregnancies; nor does she seem to have experienced any decided inconvenience during this *last* pregnancy, except during any forward motion. The mere stooping forward to wash the cups after a meal produced so much uneasiness that she had been obliged to desist from the operation for weeks previous to her delivery. She cannot recall any violent exertion by which the separation of the linea alba could have been induced.

Dr. S. added that, from never having previously met with a case of ventral hysterocele, and from the fact that those writers who refer to the subject point to individual cases which have been published, he inferred its rare occurrence.

Recovery from Ascites after Tapping.—Dr. HAYWARD, Sen., reported the case. The patient was an intemperate man, whom Dr. H. saw for the first time in November last. He was then suffering from ascites. The existence of some organic disease was at that time supposed by Dr. H. The patient was tapped in December; sixteen quarts of serous fluid were evacuated. Five weeks subsequently, eighteen quarts were taken from him. The operation was again performed, four or five weeks afterwards, in March, when twenty quarts were drawn off. Since that time, there has been no return of the affection, and Dr. H. is unable to detect any organic disease. Dr. Hayward remarked that this is the third case of recovery from ascitic affection after tapping, that has occurred in his own practice. In one of these cases, the patient had been under treatment for dyspepsia. On tapping her abdomen, a small quantity only of fluid was drawn off, but the affection did not recur. In the second case, twenty-two quarts of serous fluid were drawn off; no effusion followed. The patient recovered entirely, and, in the course of two or three years, gave birth to a healthy child. Both mother and child are still living.

Dr. PERRY mentioned two cases of recovery from this disease after tapping. In one, the patient was cured by hydriodate of potash, with compression, having been previously tapped three times. The other case was of a patient tapped three or four times by Dr. Bartlett, of Roxbury, and who afterwards recovered. Dr. Perry added that these two were, not improbably, cases of subacute peritonitis.

Early Menstruation.—Dr. PERRY related an instance of menstruation occurring in a child four or five years of age; the child to all appearance healthy, although Dr. P. supposed her to be scrofulous. The tonsils were slightly enlarged, and she had once had inflammation of the eyes. She had menstruated five times at the regular intervals. Dr. P. recommended no treatment, but advised country air.

In answer to a query by Dr. JACKSON, Dr. PERRY stated that the mammae were somewhat developed, but nothing peculiar was remarked about the pubes. The secretion had the usual appearance of the menstrual discharge, and continued for two or three days.

Remedy for the Nausea and Vomiting of Pregnancy.—Dr. GOULD spoke of the application of chloroform to the epigastrium as having been found to afford prompt and permanent relief in four cases of the above affection. A few drops, only, were applied at a time.

Dr. BIGELOW was of opinion that chloroform acted as a counter-irritant. He mentioned the case of a patient in whom vesication was produced by a few applications of this substance for pain in the side. It had not always been found to relieve pain. Dr. B. had tried the chloroform ointment, spoken of at a recent meeting by Dr. Channing, in various forms of neuralgia, and, in a few cases, had obtained temporary relief; in no instance was the relief permanent. Dr. B. doubted the alleged anodyne properties of chloroform, when applied to the skin, as it cannot act through the cuticle.

Dr. STORER remarked that, although nausea and sickness in pregnancy may be temporarily relieved by this application, he was in doubt as to its affording permanent relief, the affection being of a sympathetic nature. He considered the cases reported as possibly exceptional.

Dr. COALE related a case in which the sickness came on when the patient rose from the horizontal posture. In this instance, chloroform afforded immediate relief, lasting three to four hours, when it became necessary to renew the application.

[At the next subsequent meeting of the Society,

Dr. ALLEY reported a case of morning sickness in a patient seven months advanced in pregnancy. Relief was obtained by the external application of chloroform to the epigastrium. The remedy was applied four or five times in the day, for two successive days, with entire relief to the patient, producing little or no irritation upon the skin, a slight redness only being perceptible.

In answer to Dr. STORER's inquiry whether the relief were permanent, Dr. A. replied that four days had now elapsed since the disappearance of the symptom. No other counter-irritant remedy was employed.

Dr. SNOW asked Dr. STORER if he had employed, successfully, any other counter-irritant remedies in this affection.

Dr. STORER had tried the usual remedies of that class, but without expecting, or having found, permanent relief from them. He had frequently seen temporary relief follow the employment of blisters, &c.]

Arsenic in Remittent Fever.—Dr. C. E. WARE related a case of the above disease, occurring in a lady who had resided for three years at the West, where she had, three years since, what was called bilious remittent fever. Dr. W. at first considered it a case of typhoid fever. On the fourth day, however, the disease assumed the character of remittent fever, and there was yellowness of the skin, with some tenderness of the hepatic region; no diarrhoea; a peculiar chill and reaction occurred every second day; the chill lasting for half an hour, and the febrile reaction for four or five hours. Dr. Jackson saw the patient on the tenth day, and suggested arsenic, in the dose of six drops of Fowler's solution three times a day. The first attack, after commencing this remedy, took place on the subsequent day, and was quite severe. Twelve drops were now given every five hours. The patient suffered no farther attacks, and became at once convalescent.

Accidental Salivation.—Dr. COALE mentioned a case of this affection, in which periodical exacerbations took place twice in the twenty-four hours; viz., at one in the morning, and at the same hour in the afternoon. Quinine was given with success. The patient had not had intermittent fever, but had suffered from fever in the East.

Dr. DURKEE stated that, in the above case, which had been sent to him by Dr. Coale, the occurrence of salivation was from the application of an ointment made of \mathfrak{v} of white precipitate to \mathfrak{z} ij of lard. This was applied pretty

freely to the throat and lower part of the face, which parts were the seat of psoriasis guttata, and salivation followed on the fifth day. This was the first case of salivation produced by this remedy that had fallen under Dr. D.'s notice.

Dr. COALE mentioned another case of salivation produced by the application of the "black wash" to the throat.

July 12.—Almost Complete Occlusion of the Vagina. Reported by Dr. HAYWARD, Sen.—Dr. H. stated that he had recently operated in a case of this nature. The patient had always menstruated regularly, but with pain. She had no suspicion of her condition until marriage, which took place about a year since, when sexual connection was found impracticable. On examination, a septum was found at some considerable distance from the external orifice, with an opening in it so small as only to admit, and that with difficulty, a small probe. A director was afterwards introduced, and then an attempt was made to carry in a bistoury, which was finally successful. A catheter was now passed into the urethra, and the septum incised in all directions, except towards the bladder. After this, Dr. H. was enabled to introduce the finger, and to pass it completely around the os tincae. This is the fifth case of occlusion of the vagina that has occurred in his own practice. Two of these were cases of imperforate hymen. The third was a case of congenital malformation of the vagina successfully treated by an operation. Another was one of occlusion produced by sloughing after instrumental labour. This last was also relieved by an operation, the patient having since had a living child. In the case above reported, the septum was unusually firm, cutting like tendon. On examination, six weeks after the operation, it was found that it had afforded complete relief.

Unusual quantity of Liquor Amnii; the Placenta and Fetus both healthy in Appearance.—Reported by Dr. STORER. The patient was in her third pregnancy. When in her first, she was enormously large, and was delivered of a dead child in the sixth month; the amniotic fluid being in great abundance. In her second pregnancy, the abdomen was also greatly distended, and the labour came on in the eighth month; the child dead, as before. In the present case, labour occurred at the eighth month; there was great distension of the abdomen, and the child, as in the two former instances, was stillborn. A peculiarity of this case was the healthy appearance of the child and of the placenta, in each instance; a condition not usual in cases where the liquor amnii is in excess.

Early Menstruation.—Dr. MINOT reported the case of a woman, twenty-three years of age, who had recently consulted him for headache, having been bled one year before for the same trouble. This patient was run over by a wagon, when nine years old, since which she has menstruated regularly, the function being always attended with much pain.

Obstinate Diarrhoea preceding and following Labour.—The case was related by Dr. STORER. The patient was first seen by Dr. S. ten days ago. She had had diarrhoea for a fortnight, and expected to be confined in one month. On the second day after his visit, she was taken with pains resembling those of labour, and at the end of the second day labour came on; it being the eighth month of her pregnancy. On the following day she had nine discharges from the bowels. Lead, opium, and catechu were given

without effect. Finally, sulphate of copper, in the dose of one-sixth of a grain, combined with ten or twelve drops of laudanum, was administered. Dr. S. feared a fatal result. The patient has, however, been improving for two days past, having had but three discharges during the last twenty-four hours.

26th. Dr. Storer reported his patient entirely recovered.

Deafness produced by Quinine.—The case was reported by Dr. HAYWARD, Sen. Twelve grains of the sulphate of quinine were administered, in the course of twenty-four hours, to a patient who had been afflicted with rheumatism. In forty-eight hours after commencing its exhibition, he complained of deafness. There was no dizziness. On the second day after, the deafness was nearly complete. No tinnitus aurium. In twelve hours after having abandoned the use of the medicine, hearing was entirely restored. Dr. H. said he had frequently given quinine in much larger doses, *e. g.*, two scruples and one drachm in the course of one day; but had never before noticed the above effect. The quinine, in this case, was given combined with gentian. There were no other symptoms.

July 26.—Microscopic Anatomy of the Fetus.—Dr. DURKEE exhibited several preparations from a foetal subject, about five or six months old, which weighed only twenty-six ounces, and which he had injected with coloured size. The bloodvessels of both crystalline lenses were injected, and their branches could be seen radiating from a comparatively large trunk, and traversing the lens in every direction, until they were lost near its periphery. In mounting these two specimens, the epithelium between the lens and its capsule had not been disturbed, but could be seen apparently in its normal condition. The membrana pupillaris was exhibited, showing the beautiful arrangement of its fibres, and the ciliary arteries with their branches and anastomosing extremities injected.

The pupillary membrane, examined *in situ*, through the cornea, appeared to be about the sixth of an inch across from point to point of its border, and to consist of an entire web of fibres; but, upon removing it, and placing it on a glass slide, a narrow aperture or slit, as if made with the point of a lancet, cutting through its central portion, could be seen by the naked eye, and was about a line in length. In looking at the membrane through the microscope, an arterial branch, which has been injected, may be seen running parallel to each lip of the central opening just mentioned, and sending off at right angles several exceedingly minute twigs, which also divide and subdivide until they finally inosculate and form a chain of loops, and thus the central aperture appears to be made. A somewhat similar inosculature of bloodvessels is seen in the border of the sclerotica at its junction with the cornea, and also in that part of the choroid membrane surrounding the optic nerve as it penetrates the sclerotic coat in the back part of the eye. In the two latter instances, however, the openings are circular, while that in the pupillary membrane is a mere slit.

Judging from the specimens now exhibited, it would seem that the pupillary membrane must be formed antecedent to the formation of the iris, as scarcely a rudiment of the latter can be found—and how it can be said that the former arises from the latter, it is difficult to understand; yet Todd and Bowman seem to be of that opinion.

Dr. D. also exhibited several teeth taken from the same subject. They were extremely small—some of them not so large as a common flaxseed—

and they consisted of mere pulp; yet their cell-structure could be seen, and the nutrient bloodvessels were perfectly injected, so that the microscope brought them distinctly into view. A large number of hairs, with their related follicles and glands, removed from the eyelids of the same fœtus, were also examined by the gentlemen present.

Puerperal Convulsions. Death of Patient, undelivered.—Dr. STORER was called in consultation with another practitioner, at 10½ P. M., July 19, to a patient in puerperal convulsions. She was attacked at six in the morning, and had had repetitions of the attacks during the entire day, at longer or shorter intervals; generally, about an half hour intervening between them. She had been bled at 2 P. M. and at 6 P. M., about twenty ounces each time, but still her convulsions continued.

The patient, a woman about twenty years of age, and at her full period of pregnancy, had the aspect of approaching dissolution. She was perfectly unconscious; the surface of her body was cold and damp; the pulse exceedingly feeble. While examining her, she had a terrific convulsion.

Upon examination, Dr. S. found the os uteri slightly open, just allowing the index finger to pass, and to ascertain that a head presented. He advised that premature labour be attempted; there appeared but little chance that it could be accomplished, but no other alternative presented. The membranes were readily ruptured. Prevented by unavoidable professional engagements from remaining with the woman, Dr. S. requested the attending physician to watch her through the night, and, should she die, as it appeared most probable she would, undelivered, to open the abdomen immediately, and remove the fœtus.

Dr. S. was informed the next morning, by the gentleman in attendance, that the convulsions continued to recur about every twenty minutes, until a little past 12 o'clock, when she died, a few minutes after the cessation of a paroxysm.

Dr. — immediately opened the abdomen of his patient, and removed a child, with its extremities so contracted and rigid as to be straightened only by the application of considerable force; and with its surface livid throughout. Examining again, he removed a second fœtus, less rigid than the former.

Dr. S. stated that, in this case, as in that reported by him on the evening of June 14th, he supposed the child would probably be dead, inasmuch as the convulsions had existed so long a period previous to an attempt being made to produce delivery; but he requested that the abdomen of the woman might be opened as soon as she ceased to breathe, as the *living fœtus has been extracted* after the death of the convulsed mother.

Speaking of the treatment of puerperal convulsions, Colombat observes (Amer. ed., p. 646): "Should the mother have breathed her last during the progress of the labour, the Cæsarian operation ought to be performed, notwithstanding the slight chance of success in such an attempt to rescue the life of the child."

ART. VI.—*On the Efficacy of Belladonna as a Remedy in Pertussis.*

By HIRAM CORSON, M. D., of Montgomery County, Pa.

I HAD been engaged in practice six years, when the Essay of Dr. Jackson, of Northumberland, "On the Efficacy of Belladonna in Hooping-cough," was published in the *American Journal of the Medical Sciences* (August No., 1834). My experience in pertussis had satisfied me that all the remedies in common use—those recommended by writers upon the diseases of children—were almost useless. Children affected in the winter, continued to cough, and strangle, and suffer, for many weeks, with scarcely a perceptible amendment; and even when convalescence did commence, a long time elapsed before complete recovery. It was painful to visit, and mortifying to prescribe for, those afflicted with this malady; and so apparent was our inefficiency, that many families did not seek the aid of a physician at all; and, if urged by their friends or neighbours to do so, justified themselves by saying that "everybody knows the doctors can do nothing for hooping-cough; it will have its time." I had arrived at nearly the same conclusion previous to the publication of Dr. Jackson referred to.

In the winter of 1844–5, hooping-cough prevailed in the region a few miles above Norristown. It had not visited that neighbourhood for many years previously, so that nearly all the children at the schools were liable to the disease; and, with few exceptions, they became affected, so that the schools were nearly broken up. My brother had four little boys severely affected, and, as I was desirous to try Dr. Jackson's remedy, I read his essay to my brother, and urged the use of the belladonna. They were strong, healthy little boys, and had the disease severely. I do not now recollect the dose that we used, but they were put fairly under the influence of the medicine, every day, by repeating the dose every three hours. In one week they were all well, and returned to school, while the children of many of the neighbours suffered with the cough for several weeks afterwards.

These cases occurred a few miles beyond the limits of my practice, and I saw no more of the disease until it occurred in our own region in the following year.

January 14, 1836, Mr. S. called upon me to visit his son, two years old. He said the child had been labouring under hooping-cough for several weeks, and he did not think it could live more than a few days, for it was coughing up *matter*; but he thought he had better come for me, lest the people would make a fuss about his not getting a doctor. I told him of the new remedy; he agreed to its use; we gave it for one week, when the child was perfectly cured of the cough, though he remained weak for a short time.

A brother-in-law of Mr. S., who resided many miles distant, having heard of the cure in the above case, came to me for some of the medicine for his

child, who, he said, "had the whooping-cough so badly that they thought it would strangle to death every night." From the little experience that I had had with the remedy, it seemed to me that the dose recommended by Dr. Jackson, viz., one grain to a child two years old, was too large. I therefore concluded to begin with children, under one year, with the sixteenth or one-eighth of a grain, every two hours, and to increase a little every day until the proper dose was reached. With this view, I put eight grains of extract of belladonna into one ounce of water. Nine drops of this solution contained just one-eighth of a grain of the extract. Of this I directed him to give his child nine drops every two hours until the pupils were dilated, face flushed, mouth dry, and vision confused. If these effects were not produced the first day, then to increase the dose three drops daily. I was informed that the child was entirely cured in a week.

From this time it was used in all the cases that presented, and in every instance in which it was properly administered the cure was speedy.

In 1840, the disease prevailed over my district, and I used the belladonna in hundreds of cases, with great relief in nearly all. There were some cases, however, in which I saw no good produced; in these, the medicine did not seem to produce any effect. It is probable that the fears of the parents did not allow them to use the remedy properly. The parents were always informed of the nature of the medicine, its mode of action, and the change effected upon the pupil of the eye. Some became much alarmed, and strange stories were circulated, that I used "a medicine that was a poison, and swelled the eyes." But the relief obtained by those who used it was so great, the cures so rapid, and the medicine so pleasant to take, that one after another came to try it, until it became the only thing thought worth using.

I was not alone at this time in its use. Dr. George Thomas and Dr. Wm. Corson, of Norristown, also prescribed it.

In order that the fears of our patients should be allayed, we always desired that the first few doses should be so small as to produce no marked effect, and thus, the child not getting so quickly under its influence, the cure was somewhat retarded, but generally occurred within two weeks; when, judging from some cases which afterwards occurred, I doubt not they might have been produced in less than one week.

I will mention a few cases which were quite remarkable, and certainly should aid us in forming a judgment of the nature of this disease. I take the following cases from my note-book:—

A girl, six years old, has had the cough three weeks; paroxysms recur, the parents think, about forty times in twenty-four hours, and are very violent. Ordered one-fourth grain of the extract of belladonna every two hours, until the characteristic symptoms are produced. In about fifteen minutes, the face was much flushed, there was ringing in the ears, and croupy sound in breathing. After those symptoms passed off, a like dose was given; the same symptoms, but milder in degree; medicine repeated whenever the influence had nearly passed off. On the fifth day there was not a trace of the disease left.

This child had always been liable to croup, and had suffered some violent attacks.

Another child of the same family, a little boy, two years old, had been left until the disease had continued two weeks, and had acquired the real whoop. He had to be caught up many times through the night, for fear he would suffocate. Began by directing for him one-sixth of a grain every two hours. In a few minutes after the first dose was taken, the face became much flushed, pupils dilated, and symptoms of croup followed of such severity that I was sent for in much haste. It was 9 A. M. The case seemed just like one of spasmodic croup. I administered hive syrup, vomited him freely, with much relief, and before next morning the croupy sound had disappeared; there were but five coughing spells through the night. Next morning another dose was given; the croupy symptoms were produced, but not so severely. The flush of face, enlargement of pupils, and croupy sound, passed off before bed-time, and there was no cough worthy of notice through the night. A third dose was given, and from this time no one could have told that the child had ever had hooping-cough.

Those cases occurred in June, 1840, and never before had I seen such prompt effects from the medicine.

In August of the same year, called to C. W.'s son, aged nine months. Has had the disease two weeks. The mother thinks he coughs every fifteen minutes night and day. Ordered nine drops of the solution every three hours; increase three drops daily. In one week the cough had diminished to about four or six times in twenty-four; from being sick, restless, and moaning, it is now well and lively.

J. W.'s child, aged one year, coughs badly, the mother says, "from noon until next morning; takes no suck, and notices nothing scarcely." This child took the medicine, but had so much difficulty of respiration, from the secretion into the bronchial tubes, that we gave ipecacuanha every day to clear the passages. In three weeks, it was perfectly well.

August 21. A boy, aged two and a half years. The mother told me an older child had taken the disease in April, that it was still coughing much, and its health was much broken; that she had been so worried with it during so long a time, being much disturbed at night, that she thought if this one was to go through a similar course she could not stand it. And added, "that *this* child, who has now had it six weeks, is now *worse* than the other ever was." At 10 A. M., I directed nine drops ($\frac{1}{8}$ th gr.); in a few minutes, the face flushed, the child seemed much excited, and, after a short time, fell into a profound sleep, which somewhat alarmed the mother. He continued to sleep with little interruption until next morning; but during all this time, to our utter astonishment, he never once coughed. Next day we gave him seven drops; effects not so severe. Third day gave six drops; from this time he was perfectly well.

Sept. 1. G. R.'s child, aged *two months*. The mother says: "Has had the disease badly three weeks, coughing and strangling by night and day; it can't live without some help soon, and I am determined to try the medicine." Began with one drop every three hours; increased one drop every day until it took five at a dose. By this time it was almost well. Had no more trouble with it.

Sept. 1. J. A.'s child, aged four months, very bad with cough. Gave four drops every three hours; increase one drop every day if necessary. In four days, comparatively well.

Oct. 4. J. T.'s child, aged three months, female, coughs and whoops badly. Ordered five drops every three hours; first dose given while I was present. I immediately left for home. In about fifteen minutes after I reached it, a messenger arrived in great haste, and said the child had fits. I returned, and found it partially recovered from what they described as "a fit or strange spell; it seemed so wild, and looked so queer, and appeared as though it could not get its breath good." It slept well that afternoon and night. Gave the medicine for a few days in less doses; and in less than a week there was not a vestige of the disease left.

Oct. 15, 1840, the following note was made: I am now giving the belladonna to children all through this region, and in no instance has it failed to cure, in from three days to three weeks. The cures seem perfect. The disease has occurred this season in families, the older children of which had been cured by the belladonna four years ago. In no instance has one of those taken the disease a second time.

Persons living out of my range of practice have often applied to me to come and see their children. My rule was to offer them a portion of the extract, with a letter to their physician, directing him how to use it. This they sometimes declined; and then I gave them the solution with directions for its use. A young man came to me and stated that his sister's children had the whooping-cough so badly, that one of them, three years old, was entirely confined to bed; and the other, of five years, was hardly able to be about. He wished me to give him medicine for the former; for the latter, they were trying a remedy from Philadelphia. In three days, he returned and wanted medicine for the latter, saying that the former was nearly well. Four days after he came again to get some for a neighbour, and said he considered his sister's children well. I never saw them. Every person was told what the medicine was, and how to use it.

In the summer of 1847, I was called to see a little boy, four years old, and his sister of two years. I cannot truly describe the condition of those little sufferers. Their face, body, and limbs were bloated; they were sallow and bloodless looking; frequent pulse after fits of coughing, with hurried respiration, mucous rhonchus, and excessive general distress and debility. The cough was frequent, prolonged, and exhausting; and in one of them was accompanied by discharges from the rectum during every paroxysm. A younger child, of nearly a year old, lay dead in the house from the same disease; although a most eminent physician, aided by the best means that wealth could command, had been in constant attendance. Nothing had done any good for any of these three children. The belladonna and carb. ferri were given to the two to whom I was called, and in ten days they were well. The result was truly astonishing.

A man came from Chester County to get some medicine for whooping-cough. I gave him some to take to his physician, wrote my directions for using it, and referred him to Dr. Jackson's communication in the *Medical Journal*. In a few months I met the same man, and asked him how his child was; he said that he did not know that the medicine did any good; the child was a long time getting well; that the doctor had called at his house recently, and

told them that he had killed three children with it, and had ceased to prescribe it. I asked: Is he intemperate? He replied in the affirmative. A few months afterwards he died of delirium tremens.

In November, 1850, the disease again appeared in this region, and I used the belladonna freely with good effect. I will briefly mention a few cases.

Three children of three, five, and seven years of age, coughing badly, began the youngest with nine drops, the others more; increased rapidly until perceptibly affected. Well in ten days.

Nov. 19. M. R.'s son, three years old, has taken the medicine for one week. Mother thinks him nearly well. 25th. Is quite well. A younger child afterwards took the medicine.

Three children, eldest five years old, youngest four months, took the medicine so as to be under its influence daily; well in one week. Scores of such cases might be offered, but it is unnecessary.

I will mention one of a different character.

S. S.'s child, boy, five years old, coughs badly, strangles much. *Nov.* 13, began with ten drops every three hours. 17th. Takes thirty-five drops every three hours; no relief. Ordered it every two hours, and increased freely. 21st. Takes ninety drops every two hours; produces none of the characteristic effects of belladonna. I continued this medicine in teaspoonful doses for several days longer, but with little apparent effect upon the cough.

I cannot believe that the parents deceived me in their account of the case. The other children were also taking it, and with relief; while this one suffered so much as to be the greatest cause of anxiety to them. Nor was there any other disease. It was a pure hooping-cough. It is true that I prescribed it in very many cases in which it did but little good; but that arose from the inefficiency of the administration.

Jan. 15, 1851. I prescribed the belladonna for four children in one family. The youngest was nearly two years old, and suffering somewhat from the irritation of teething. It took one dose of nine drops the first day; another dose next day; and about 10 o'clock on the third day got a severe fit. I was sent for in much haste. When I came, the mother said: "Doctor, you have killed my child with that stuff. I'll never give another drop of it to any of my children." As I knew the family well, I reminded her that others of them had had fits while teething. She said that not one of them, seven in number, had escaped having fits while teething. The child soon recovered from it, and yet the mother continues to say that she does not know that it was the medicine that produced the fit, but she would never give it. There was not the least evidence of the child being affected by the belladonna.

I mention this case to show how it is that there is a fear kept alive among the people in relation to this medicine. Such cases are noised abroad. If anything at all should happen to a child who is taking belladonna, it is charged to the medicine; hence physicians are reluctant to assume the responsibility of giving it, when they can pursue the old plan, which is without risk.

During the last seventeen years, I have given the extract of belladonna to hundreds of patients, from two months to fifty years of age, and am firmly convinced that it has a greater control over hooping-cough than any other remedy in common use. That, while in a few cases the system did not seem

susceptible to its action, in the doses I have prescribed, yet, in nearly all, the disease yielded quickly. It is a safe and efficient remedy for pertussis in children of any age. It is very remarkable that, after the publications made by Dr. Jackson in the *Medical Journal*, we should have book after book upon the diseases of children, and the whole host of old and useless remedies for whooping-cough carefully noted, without a word in favour of belladonna.

ART. VII.—*A very large Mesenteric Tumour, simulating Ovarian Disease, successfully extirpated.* By P. J. BUCKNER, M. D., of Cincinnati, Ohio.

THE subject of the following case was under the care of G. E. Eels, M. D., of Lithopolis, Ohio. It was looked upon as a case of ovarian disease; and, believing it a favourable one for extirpation, the patient was so informed, and advised to consult G. W. Boerstler, M. D., of Lancaster. Mr. Tegarden accordingly took his wife to see Dr. Boerstler, who, upon examination of the case, concurred in the diagnosis given by Dr. Eels, and also advised its removal. Through him I was subsequently consulted by letter, and requested to undertake the operation.

Dr. Eels furnished me the following history of the case:—

On the 15th of April, 1849, my attention was first called to the case of Mrs. Tegarden. I found her in the enjoyment of excellent health, the mother of eight children, the youngest six months old. She informed me that, soon after her last confinement, she had discovered a small tumour within the abdomen, which was increasing in size, but up to this time gave her no particular inconvenience. On making an examination, I found the tumour as had been represented, within the abdomen, about the size of an orange, occupying a central position directly above the pubis. It was movable in various directions, insensible to pressure, surface smooth.

On examination per vaginam, I became convinced it had no attachment to the uterus, but could not satisfy myself in regard to its nature or connections. How long it had existed, she could not tell; and as she had been attended by an ignorant midwife in all her confinements, nothing could be learned from that source.

She was put upon the use of iodide of potassium internally, with an occasional laxative, and the iodo-mercurial ointment externally. These agents were continued some months, from the use of which she fancied some diminution of the tumour took place. I was satisfied, however, that such was not the case, although it did not increase to any appreciable extent. Sometime in the month of April, 1850, she became pregnant, and owing to the irritability of the stomach all medication was suspended.

During the first months of gestation, the patient enjoyed a usual degree of good health, but the latter part of the period was one of continued suffering, from frequent attacks of colic. Some of these attacks were extremely severe, threatening a speedy termination in death. She, however, suffered on to the

end of the term, and on the 11th of January, 1851, after a natural and easy labour, gave birth to a full-grown, healthy, male child.

The morbid tumour was, during gestation, easily felt above and to the left of the uterus. After her confinement, the tumour was discovered to have very much increased in size, and was troublesome both on account of its weight and the obstruction which it occasioned in the intestinal tube, for attacks of colic, although not as severe, were still very distressing. By its pressure upon the fundus of the bladder, the functions of that organ were also deranged.

Under these circumstances, being convinced that the only reasonable hope of relief was a resort to an operation for the removal of the tumour, the patient was referred to my much valued friend, Dr. Boerstler, of Lancaster, for further advice. The doctor's views of the case coincided with my own; and at his suggestion, and by mutual arrangement, the case was reported to yourself, with the request that you would operate, if you should concur with us in thinking it advisable.

The patient has been made fully aware of the dangers and uncertainties attending such operations, and is extremely desirous that the operation should be performed, provided her medical advisers think her case affords as reasonable a hope of success as the majority of such cases.

Not having seen the case, but having the utmost confidence in the medical skill of my worthy friend, Dr. Boerstler (at that time having no acquaintance with Dr. Eels), I addressed a letter to the former, advising that the patient be put under suitable treatment to prepare her for the operation; that, when in a proper condition, if notified, I would visit the lady, and if I should, on seeing her, concur with them in the character of the disease, and deem an operation practicable, I would operate.

The patient was, on the 9th of September, put upon a preparatory course of treatment, consisting of low farinaceous diet, with an occasional laxative composed of blue mass and comp. ext. coloeynth, which was continued up to the time of the operation.

I visited and saw the lady for the first time on the 3d of October, 1851. On examination I found a firm, rather elastic tumour, in the abdomen, in feel and appearance about the size of a man's head, occupying rather a central position, but rather the more prominent on the left side. It was smooth and spherical, and freely movable in every direction, having very little sensibility manifest on pressure. From the freedom with which it could be moved and pushed into either side, or elevated and depressed by the hand, I felt justified in the conclusion that there were no very firm adhesions, if any.

Examination per Vaginam.—I found the uterus of normal size, and *in situ*, easily moved from side to side by the index finger, apparently having no connection with the tumour; which, however, could be felt through the walls of the vagina, above and anterior to the uterus. After a careful examination of the case, I confess I was led to concur with the attending physicians in the opinion that it was ovarian in character, and presenting as favourable a case for operation as is usually met with, and so expressed myself to the patient and her friends. At the same time, I informed them of the uncertainty which attends the diagnosis of such cases, the difficulties attending the operation, as well as the danger and uncertainty of success. I further remarked to the patient and her husband that I would not advise the operation; but, if

she desired it, after having been made fully aware of the magnitude and hazard of the operation, I would operate. She remarked that her attending physician had apprised her fully of the character and danger of the operation, and that she had made up her mind to have the tumour removed.

Operation.—On the next day, the 4th of October, 1851, I proceeded to the operation, in presence of Drs. G. E. Eels, Boerstler, Minor, Potter, and several other medical gentlemen. The patient, after being suitably dressed for the operation, was placed upon a table, her head and shoulders supported by pillows, and her feet resting on two chairs. Dr. Eels administered chloroform; when fully under its influence, the abdomen was divided in the linea alba, from the umbilicus to pubis, by an incision of nine inches; the peritoneum being carefully divided, the tumour was brought to view; when, to our surprise, it was discovered that the tumour was in the *mesentery* between the lamina of the peritoneum, and surrounded by the small intestine. Here was a state of things requiring sound discriminating judgment, cool and deliberate action, certainly involving great responsibility. I need not tell the reader that no one felt it more than myself. I remarked to my medical friends, and in the presence of the husband, that we had before us a much more formidable case than we had anticipated; that, in removing the tumour, the intestine must be dissected from its connection with the mesentery twelve or fifteen inches, and great and extensive injury be done to the peritoneum; that numerous bloodvessels would be divided, and the hazard to the woman's life greatly increased beyond the common operation of ovariectomy, if she could by possibility recover at all. And I suggested that it was a grave question of duty we had to decide, whether we should close up the wound in the abdomen and leave the woman to her fate, or proceed with the operation and remove the tumour.

The husband, with great firmness and decision, replied: "*Gentlemen, I have neither advised nor opposed the operation, but have left it entirely to my wife, who determined to have it removed; as you have gone this far with it, and she cannot now be consulted (being unconscious from the action of chloroform), it is my wish that the tumour be removed.*"

It was decided that the operation should proceed. An incision was made through the peritoneum, about an inch from the intestine on each side, and parallel with it, which divided numerous small vessels, that bled freely. These incisions were each in extent over twelve inches in length. With the aid of the thin edge of the ivory handle of my scalpel, I separated, rather rudely, the peritoneum and intestine, between those incisions, from the fibrous sac of the tumour, to the extent of at least twelve inches. By this procedure the bleeding from the numerous small vessels was prevented. The intestine being now freed from the tumour, I next, in a similar manner, separated the lamina of the peritoneum on either side of the tumour, from the parallel incisions backwards towards the root of the mesentery; when, on its posterior surface, I found a considerable branch of the superior mesenteric artery entering the tumour, which supplied its nutrition. This was secured by ligature, divided, and the tumour removed. Several small arteries required to be ligated; the parts were sponged as clean as practicable, the detached intestine was folded as the link of a chain, so as to bring the raw surfaces of the intestine and peritoneal margins in contact, and the omentum majus brought down over it to hold it *in situ*. The abdomen was closed by five interrupted sutures, supported by adhesive strips, covered by compress and bandage, and the lady placed in bed.

The whole operation did not exceed thirty minutes; the patient was not restored to consciousness until after she was placed in bed; and was wholly unconscious of pain during the entire operation.

I left the patient that afternoon in the care of her family physician, Dr. Eels, who kindly furnished me the following history of the subsequent treatment and symptoms of the case:—

The prostration following the operation was very great. Pulse remained small and very feeble through the day, with cold extremities. Gave her nitrous ether twenty drops, tinct. opii five drops every hour, and dry warmth to the extremities. At 9 o'clock P.M. the patient began to revive, and at 10½ she slept quietly one hour. She awoke much refreshed, and was comfortable the remainder of the night; suspended nit. ether and tinct. opii.

October 5th. 8 o'clock A.M. Patient comfortable; pulse 100, soft and good volume; some thirst; skin natural temperature. Emptied bladder by catheter; urine one-half pint, and natural. Ordered toast or rice-water for nourishment, tinct. opii twenty-five drops, if restlessness supervened.

6th. 9 o'clock A.M. Still comparatively comfortable; pulse 110, soft; skin slightly above natural temperature and dry; great thirst set in. Bladder has been emptied three times, twice by catheter; urine high coloured, quantity one pint. Abdomen not swollen or tender on pressure; but she complains of darting, lancinating pains. Ordered ice water applied to the abdomen; sponge surface (face and hands) with tepid water, and give tinct. opii twenty-five μ . 6 o'clock P.M. Comfortable; pulse 100, soft; skin natural; has no pain in abdomen; bladder emptied at 3 o'clock. Prescription continued.

7th. 7 A.M. Had a comfortable night, slept quietly at intervals; pulse and surface the same as at last report. Thirst urgent; abdomen slightly tumefied, but without pain or tenderness. Prescription: continue ice and ice water; tinct. opii *pro re nata*. 6 o'clock P.M. The same as this morning; urinated freely without aid; one pint, high coloured. Prescription the same as this morning, with the addition of an enema of warm water.

8th. 9 o'clock A.M. Present, Drs. Boerstler and Potter. Patient rested well; pulse 112, soft; skin soft, and a little above natural temperature; complains of no inconvenience but fatigue from her confined position. Bowels moved by enema, dejections yellow, mostly fluid; urine drawn off twice during night, natural. Abdomen less distended, and without pain or tenderness on pressure. On removing the dressings, we found that no adhesion had taken place in the integuments, and but slight appearance of lymph; condition of the subjacent muscular incision not examined. Prescription continued. 6 P.M. Same as this morning; took twenty-five drops tinct. op. at 12 o'clock, and rested well.

9th. 7 A.M. Patient had a quiet night. Pulse 105, soft; skin soft and of natural temperature; tongue moist; thirst much diminished. Urinated two or three times without aid. Abdomen slightly tumefied. 6 o'clock P.M. General symptoms same as this morning. Enema passed off coloured yellow.

10th. 9 o'clock A.M. Took tinct. opii gutt. twenty-five at 9 o'clock last evening, and rested well. Pulse 120, soft and feeble; some heat of surface. Abdomen more distinct; no pain or tenderness; urinated freely. Removed the two lower sutures; dressed the wound with adhesive straps; no adhesion of the integuments; edges of the subjacent muscular tissue in apposition and adherent. Prescription continued. 6 o'clock P.M. No change in condition of patient; continued ice water to abdomen, and ice to allay thirst; nourishment, toast or rice-water; sponge surface with tepid water; tinct. opii twenty-five drops.

11th. 8 o'clock A. M. Same as last report. Pulse 115, soft; skin natural; tongue moist and white; abdomen free from pain or tenderness; rather more distended. Prescription sulph. magnes. ʒij every three hours until the bowels are moved, to be hastened by an enema of warm water. 6 o'clock P. M. Symptoms same; enema came away coloured yellow. Prescription. Suspended sulph. magnes., repeat enema.

12th. 9 o'clock A. M. Patient took no anodyne last night; consequently, did not rest well. Complaints of fatigue only. Bowels have been opened twice; discharges semi-fluid, natural; pulse 120, soft; skin moist; thirst less. Abdomen less tumefied, with no pain or tenderness on pressure. External incision presents no appearance of adhesion; edges pale and flabby; a small quantity of healthy pus at the lower angle of incision. Brought the edges in apposition, and secured them by adhesive straps. Prescription. Omitted cold-water dressings, and allowed the patient more nourishment, such as milk, weak animal broth; anodynes *pro re nata*. 6 o'clock P. M. The patient has been more comfortable than any day since the operation. Prescription continued.

13th. 9 o'clock A. M. Pulse 115, soft; skin soft and cool, rested well through the night. Abdomen more distended; discharge from incision more abundant. 6 o'clock P. M. No change in symptoms since morning; urinated one pint and a half, natural. Prescription. Sulph. magnes. ʒij, enema of warm water and molasses.

14th. 9 o'clock A. M. Patient comfortable; pulse 108, soft; skin cool; tongue moist; no thirst; some appetite; no pain or tenderness of abdomen, though more distended. Edges of integuments not united, less pale than at last dressing; bowels slightly moved. Prescription. Repeat sulph. magnesia. 6 P. M. Continues comfortable; bowels moved twice, discharges fluid and yellow. Prescription. Tinct. opii gutt. twenty-five.

15th. 9 A. M. Pulse 103, soft; skin natural; has had three discharges from bowels, yellow and fluid. Patient rests well, sleep quiet; pus more abundant from wound. Adhesion between the edges of the muscles appears firm; integuments adherent to the subjacent muscles. 6 P. M. No change in condition of patient. Took twenty-five m tinct. opii at 12 o'clock.

16th. 8 A. M. Found our patient more restless; abdomen distended; pulse 115, soft; urine copious and natural; skin cool; some thirst; face flushed. Prescription. Morphine gr. half. 6 P. M. Very restless; pulse 120, soft; face flushed; abdomen greatly distended. Prescription. Enema of warm water and molasses which moved the bowels freely; discharges contained much hardened feces. Prescription. Tinct. opii gutt. twenty-five, to be repeated if necessary.

17th. 9 A. M. Present, Drs. Boerstler, Minor, and Potter. Patient rested well through the night, and more comfortable this morning. Abdomen less distended; pulse 115, soft; skin soft and cool; face flushed. Condition of wound. The edges of the muscles were found to be firmly united; the integuments also adherent to muscles beneath. As the abdominal cavity evidently contained fluid, a small incision was made through its walls at the lower angle of the wound (by Dr. Boerstler), from which escaped two pints of blood in a state of decomposition, and very fetid. This fluid was examined by Dr. Boerstler with the following results: "Under the microscope the blood-disks were found very much broken down, and filled with air, which frequently coalesced under the field of vision. The liquor sanguinis presented the appearance of water in which flesh had been washed, and was filled with innumerable globules of from one to four lines in circumference (under a magni-

fying power of 120 diameter), which we supposed to be pus-globules. A portion of the blood was submitted to heat, nitric acid, and liquor potassa; not the slightest trace of fibrin could be detected. The liquor potassa produced a blackish precipitate, presenting under the microscope broken up pus-globules." Prescription. Sulph. morphia gr. half. Ordered beef tea for nourishment. 6 o'clock P. M. Wound discharges copiously; the character the same as this morning; no change in symptoms; appetite good. Prescription continued.

18th. 8 o'clock A. M. Patient rested well through the night; had one natural operation from the bowels; pulse 110, soft; skin natural; tongue moist; discharge from wound half a pint; character same as yesterday; 6 P. M. continues the same.

19th. 9 o'clock A. M. Present, Dr. Potter; patient quite comfortable; pulse 98, soft and more volume; skin cool; abdomen much reduced, with no pain or tenderness on pressure; can turn herself on either side with ease; discharge from wound during the night and this morning three-quarters of a pint of same colour and odour as yesterday, but more tenacious; flush of face gone. Takes her beef tea with relish. Pres. tinct. opii, if necessary to overcome restlessness. From this time she continued to improve gradually; the discharge from wound diminished and assumed a different character, becoming less fetid, and less appearance of blood, assuming daily more the character of pus. On the 28th of October, it was pure healthy pus, and small in quantity.

November 8th. The patient is able to be up, and walked across the room. The wound discharges a limpid serum without a trace of pus. Her health is good; she feels no inconvenience from the operation but weakness; bowels regular. Allowed her a more generous diet of animal food and porter.

11th. Either from over-exertion, a slight cold, or improper diet, our patient became feverish. Hot skin; flushed face; pulse 100, soft; some headache, with complete loss of appetite. There is also some tenderness of the abdomen, with a considerable degree of hardness. Discharge from lower angle of wound, again purulent; in quantity, about two tablespoonfuls in twenty-four hours; bowels constipated. Pres. R. Blue mass, ext. colocynth comp., aa grs. v. M. ft. pil. Fomentations to abdomen; toast-water, as both drink and nourishment. The use of porter suspended.

12th. 9 o'clock A. M. Found our patient better; bowels moved three times; discharges natural; pulse 96; skin, natural temperature; no thirst; abdomen still rather hard and tender; discharge from wound about same as at last note. Pres. pulv. Doveri grs. v. every three hours; fomentations continued.

13th. This morning found patient improved; pulse 90, soft; skin moist; appetite improving; less tenderness in abdomen. Pres. continued.

14th. Continues to improve; tenderness of abdomen much diminished; discharge from wound less; appetite good; bowels regular. From this time the patient recovered rapidly, and, on the 20th of November, was able to be up again; the wound entirely ceased discharging.

26th. Our patient is in the enjoyment of excellent health; is able to attend to her household duties. The wound has entirely healed. The space between the edges of the integuments, occasioned by the want of union by first intention, filled up by granulation, leaving a cicatrix of four lines in width. It is now about nine months since the operation was performed; the lady still continues to enjoy excellent health.

When we take into consideration the tissues involved, the terrible and ex-

tensive lesions in the peritoneum, the extent to which the intestine was detached from the mesentery, as well as the division of numerous bloodvessels so freely anastomosing with each other, as the arteries of the mesentery, it certainly presents a case, if not without a parallel in the annals of surgery, at least one of rare occurrence. It shows, in a remarkable degree, the power of nature to repair injuries.

The most remarkable feature in the case is that the bowels should maintain their integrity of function; that so extensive a lesion of the chyloferous vessels should be followed by no disturbance of the nutritive functions; so far as can be judged of from her general health it remains unimpaired. In truth, she recovered in as short a time, and with as little suffering, as patients generally do who have undergone the operation of ovariectomy.

I cannot conclude the report of this case without acknowledging my obligations to my friend Dr. Eels, who conducted its subsequent treatment, to whose skill and indefatigable attention may be, in a great manner, attributed the favourable termination of the case. Also for the minute details of the symptoms and treatment which he has kindly furnished. I would in this connection also acknowledge myself much indebted to my venerable and worthy friend Dr. Boerstler, for his valuable aid and attention to the case.

The case presents at least another instance of the difficulty and uncertainty of diagnosis, in abdominal tumours, and fully confirms the justness of the remarks of that distinguished physician, J. Macfarlane, M. D., of Glasgow. In his admirable *Clinical Reports*, he says:—

“There is not, in fact, a more difficult and uncertain part of medical practice than to distinguish between different tumours daily to be met with in the abdomen, or to obtain anything like conclusive or satisfactory evidence as to their origin and connections. It is this uncertainty of diagnosis, so generally felt and acknowledged, that renders the question regarding the propriety of surgical interference so interesting and important. This difficulty is increased, because, in all the artificial divisions of the abdomen, there is situated, not a single organ, but a variety of parts—in any one of which the tumour may be situated. If it exists in the centre of the abdomen, it may arise from the peritoneum, the omentum, the intestines, the mesentery, the stomach, &c.; if in the hypogastrium, from sources not less obscure, as the uterus, ovaria, cæcum, &c.”

This obscurity of diagnosis can only be overcome by large experience and practical observation. Hence the value to the profession, and especially the junior members, of faithfully reported cases. I have given the case with the hope that the practical facts, and deductions to be drawn from them, will be of service to others, though it may subject me to the censure of some of my professional brethren who are opposed to such operations, and who may, perhaps, feel disposed to charge me, not only with error in diagnosis, but even rashness and an unwarrantable interference, in proceeding with the operation, after it was discovered to be located in the mesentery. But, feeling satisfied that, if we should abandon the operation, after so extensive a section of the abdomen, and leave the tumour, she would ultimately die from the increase of

the morbid growth, if she should even escape the immediate hazard of peritoneal inflammation, and being urged by the earnest desire of the husband to complete the operation if possible, I felt warranted in proceeding. The result is but another instance of the many achievements of modern surgery; though I would not be understood as advocating the Utopian doctrine, that "*the end justifies the means.*"

ART. VIII.—*A Case of Leucocythemia.* Communicated by ADDINELL HEWSON, M. D., Resident of Pennsylvania Hospital [with a wood-cut].

IN a series of papers published in various numbers of the *Edinburgh Monthly Journal of Medical Science*, for the years 1851-'52, Professor J. Hughes Bennett has called the attention of the profession to a peculiar condition of the blood found in some cases of enlargement of the spleen, thyroid, and other lymphatic glands to which he has given the name of *leucocythemia*, from the increased number of white blood-cells found in such blood. These papers contain the histories of thirty-seven cases collected from various sources, and some very valuable remarks from Professor Bennett. From the fact that this peculiar condition of the blood has heretofore escaped the attention of the profession, and that it appears to throw some light on the functions of the spleen, these papers present much interest to the profession, and cannot be too widely disseminated in this country.*

As yet no cases of this blood disease have been published in this country, and we are therefore justified in presenting, in detail, the history of the following one, which came under our observation in December last, but which, owing to want of leisure, we have not before been able to present to the profession.

Charles Robinson, a native of Philadelphia, aged seventeen years, was admitted into the hospital, December 18, 1851, when he gave the following history of himself: He had just returned from a voyage at sea; had been to Wilmington, North Carolina, and to St. Martins (West Indies). He was in Wilmington in October, during the prevalence of the miasmatic fevers of that place, but was never unwell there. He then went to St. Martin's, from which place he sailed for Philadelphia, about the end of November; the voyage occupied twenty-three days. He was taken ill when a few days out from St. Martins, and continued so until his arrival here, when he sought admission into the hospital. He was anemic, lips and tongue blanched, lower extremities œdematous and feeble. Complained of no pain in any particular region, but of general debility. His first symptoms had been those of lassitude with pains in his limbs. He had never had intermittent in his life, and was confident

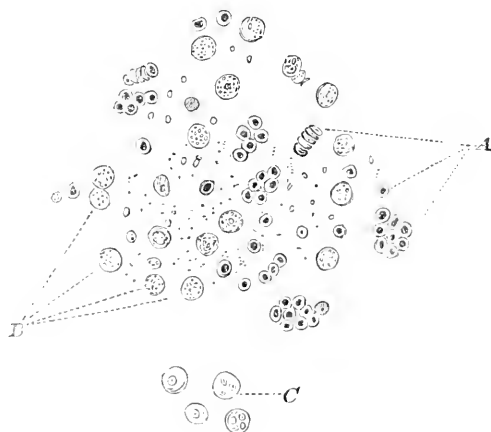
* We believe they have been collected and published in pamphlet form by Professor Bennett, in Edinburgh.

that he had not had a chill on the voyage home. He had never noticed any enlargement of his abdomen, and was never conscious of the existence of a tumour there. He always thought that his illness arose from the œdematous condition of his feet. He had suffered for some days with diarrhœa. His abdomen was much distended, measured twenty-eight and a quarter inches in its greatest girth; the left half was the larger, and was dull over the greatest part of its extent. The lower border of a tumour could be felt through the walls of the abdomen on that side. It extended by percussion from the lower edge of the sixth rib down to a line parallel from the umbilicus, eight and a half inches; and it was nearly eight inches broad. Its anterior border extended to within an inch of the mesian line, and was indented one inch below the cartilages of the lower ribs. The liver was slightly enlarged; it extended one and a half inches below the lower border of the ribs. His urine was scanty, sp. gr. 1017; no abnormal sediment; no precipitate by heat or nitric acid. There were no signs of any disease of his lungs; there was a slight bellows murmur to be heard over the heart and the large vessels. He had had epistaxis. He was ordered *pilul. ferri carbonat. gr. v*, thrice daily. *Infus. bacca. juniperi Oss*, daily. Good nutritious diet.

On Saturday morning (Dec. 20), Dr. Wood presented him before his class, and called their attention to the possibility of his being a case of leucocythemia, as had been suspected by us the day before, but which, owing to our microscope not being conveniently at hand then, had not been determined. Whilst in the lecture-room he had a chill and had to be removed to the ward, where he was ordered *tinct. opii camphorat. ʒj*, and warmth to his extremities. This chill was soon followed by fever, which did not leave him until dark, when he was ordered *quinia sulphat. gr. iv* every four hours.

In the evening we examined his blood, and found a great redundancy of the white corpuscles. The following is a sketch of the microscopic appearance of some of his blood.

Fig. 1.



A. The red blood corpuscles.

B. The white blood corpuscles.

C. The same treated by acetic acid.

On the following day he had some epistaxis in the morning, and complained of ringing in his ears, but had no chill. He was ordered *quinia*

sulphat. gr. ij thrice daily, and to continue the pills of iron and the infusion.

On Monday (22d) the œdema had all disappeared, and the diarrhœa had ceased. His urine was normal in quantity. The infusion was stopped, the rest continued.

On Wednesday (24th) he was doing well. Pulse 100. Tongue clean but pallid. Bowels open twice in the twenty-four hours. Spleen somewhat diminished in size; had receded one and a half inches on its anterior border. He had passed two quarts of urine in the last twenty-four hours, which deposited on cooling prismatic crystals of the triple phosphates, uric acid crystals, and epithelial scales. He was ordered to continue the iron and quinine as before.

On Friday he was still improving, and the quinia was ordered gr. j four times a day.

By January 1, he had much improved in general appearance; had gained in flesh and had a good colour. His bowels were regular, his appetite good. His spleen had receded one inch since the 24th of December, but the girth of his abdomen had increased to thirty inches. The size of the liver had been noticed to be increasing for some days; its lower border now extended as low as the crest of the ilium, and was the cause of the increased size of the abdomen. This increase of the liver appeared to have been in direct ratio with the decrease in the size of the spleen.

He was ordered pilul. hydrarg. gr. ij four times a day, and to omit the quinia but continue the iron as before.

January 3. He was about the same. Walls of the abdomen tense, tenderness over the liver. A drop of blood from the finger presented, as before, under the microscope a redundancy of the white corpuscles. He was ordered emplast. cantharid. six by six inches for the right hypochondriac region, to continue the pilul. hydrarg., but omit the iron. Milk diet.

18th. The spleen had continued to decrease since last note, and was reduced to about five inches in length. The liver had also decreased, the lower border was then about two inches below the ribs. He had good appetite. Pulse good, 100. Tongue clean. Skin over the whole surface of his body presented a slightly mottled appearance. His blood was found to present the same appearances as at previous examinations; it might be possible that the white corpuscles had slightly decreased in number, but it was difficult to determine this fact with any degree of certainty. The pilul. hydrarg. was stopped, and he was ordered acid. nitro-muriat. gtt. v thrice daily. Soup diet.

The above treatment was continued up to the 20th of January, when he was seized in the evening with purging and vomiting, which continued through the night, and on the following morning he had some fever with headache. Pulse 120. He was confident that he had had no chill. His abdomen was tense, greatest girth thirty inches. The lower border of the liver was about two inches below the ribs. The spleen had very much increased since last note, it now extended to within an inch of the marks (in nitrate of silver) of its size at the time of his admission. He was ordered quinia sulphat. gr. iv thrice daily. Pilul. ferri carbonat. gr. v thrice daily. Emplast. cantharid. six by six inches to be applied over the spleen.

On the 27th of January, his spleen was found to have diminished in size, its anterior border had receded two inches. The lower edge of the liver was about three inches below the ribs. Skin natural, pulse 100. Colour good. Bowels open twice in twenty-four hours. His blood presented fewer of the white corpuscles.

Two days after this his spleen was found to have decreased to as small a size as it had ever been since his admission. His liver was only two inches below the ribs.

These organs gradually decreased until they reached their natural size; his general health was very much improved, and he was discharged as cured on the 16th of February. His blood, examined by the microscope, was apparently healthy.

He called to see me during the month of April, and was apparently in perfect health, but a drop of his blood presented still some redundancy of the white corpuscles. He had not been unwell a day since he left the hospital, in February.

Remarks.—The symptoms in this case are similar to those in many of the cases reported by Professor Bennett. In this case we can scarcely consider that the *blood-disease* was cured, as signs of it existed in April, although the patient was apparently in perfect health.

The engorgement of the liver coming on as the spleen began to diminish, and the subsequent increase of the spleen as this engorgement of the liver began to yield to remedies directed to it, is peculiar and interesting. It might be thought at first that this engorgement of the liver arose from the highly tonic plan of treatment employed in this case, particularly as it disappeared when the treatment was altered, and the remedies directed to its peculiar condition. But it did not return after the same tonic treatment was resumed, and it is difficult, from having observed the various changes in the case, to divest one's mind of the idea of some counterbalancing or sympathetic influence between the two viscera.

This peculiar condition of the blood is not to be found in all cases of enlargement of the spleen, for since our attention was called to the subject we have examined the blood of a number of anemic patients with great engorgements of that viscus, the result of obstinate intermittents, but in none of them have we been able to detect, after careful examination, any increase of the white corpuscles. The same may be observed of a case of enlargement of the thyroid gland in which we examined the blood. We have to regret that there was no chemical analysis made of the blood in this case of leucocythemia.

This pathological condition of the spleen throws great light on the true functions of that organ, and tends greatly to the support of the views first promulgated nearly eighty years ago, by our grandsire, Wm. Hewson. He considered the spleen as belonging to the lymphatic glandular system, and that it was engaged in the more perfect formation of the red corpuscles from the white. These white corpuscles of the blood he considered the same as the cells of the chyle and lymph, and that they contained nuclei capable of development into the red corpuscles. In the spleen this development takes place, and the red corpuscles are carried into the general circulation by those lymphatics of the spleen which empty into the thoracic duct, and are the true excretory ducts of the spleen. Such or similar views have since met the support of Tiedemann, Gmelin, Donne, Schultz, and others. To enter into their

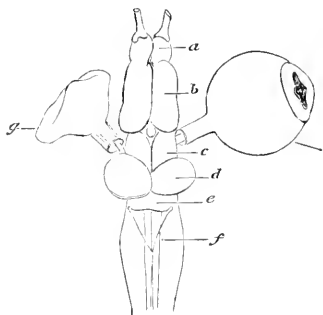
details, or to state the arguments *pro* and *contra*, would be foreign to the object of this communication. We must, therefore, refer those desirous of further information on the subject to the valuable paper by Professor Bennett, on the "Functions of the Spleen and other Lymphatic Glands," in the number for March, 1852, of the *Monthly Journal of Medical Science*, and to the "Works of Wm. Hewson," republished by the Sydenham Society, London, 1847.

PENNSYLVANIA HOSPITAL, August 18, 1852.

ART. IX.—*Blindness in one Eye attended with Atrophy of the Optic Nerve and Optic Lobe.* By JEFFRIES WYMAN, M. D. [With two wood-cuts.]

THE dissection here described was made on a common Bull-frog, which, when caught, had from accident become wholly blind in the left eye; and in this condition remained in my possession alive more than seven months. The contents of the globe were entirely evacuated, the wound was completely cicatrized, though the remnant of an eye was still movable, and was retracted or protruded simultaneously with that of the opposite side. The following are the appearances which were presented by the dissection, and which may be readily understood by a reference to the figures:—

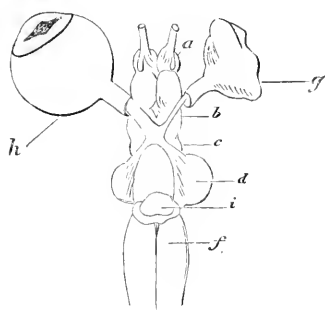
Fig. 1.



UPPER.

- a. Olfactory lobes and nerves.
- b. Cerebral lobes.
- c. Optic thalami.
- d. Optic lobes, the right atrophied.
- e. Cerebellum.

Fig. 2.



LOWER.

- f. Medulla oblongata and fourth ventricle.
- g. Injured eye (the left) optic nerve atrophied.
- h. Sound eye.
- i. Pituitary body.

The sheaths of the optic nerves exterior to the cranium presented no marked difference. Within the cranial cavity they were seen to be of quite different sizes; that on the right preserving its usual dimensions, while that on the left was reduced to a mere filament, as far as the chiasma. Behind

the union of the nerves the optic tract of the left side retained its usual proportions; while that on the right had become atrophied to the same extent as the left nerve in front of the chiasma; and the prominence which this tract makes on the side of the optic thalamus was scarcely traceable. The right optic lobe was likewise obviously atrophied, its measurement being reduced by about one-third.

In the dissection of a second frog, blind in the right eye, there was an equally manifest atrophy of the left optic lobe; but the condition of the nerves was not seen, as the dissection was made from above only, the lower surface of the brain not having been exposed.

We have then, in both instances, atrophy of the optic lobe opposite to the injured eye, as the attendant of blindness and disuse. In the first case described, the atrophy of the nerve was on the same side before the junction of the nerves, and on the opposite side behind the junction.

In classifying the cases in which the optic nerve undergoes atrophy in consequence of blindness, and with reference to its extension beyond the chiasma, Longuet arranges them in three groups:—

1. Those in which atrophy extends beyond the chiasma *on the same side* with the injured eye.
2. Those in which the atrophy is on the *opposite side*.
3. Those in which, with blindness in one eye, and atrophy of one nerve in front, there is atrophy *on both sides* behind the chiasma.*

There is another class of cases, and which Longuet thinks is the most numerous, where the atrophy extends from the globe to the chiasma only, but not beyond it. The cases, however, in which there is atrophy before and behind the chiasma, with atrophy of the optic lobes, would seem to be far less numerous, or at least to have attracted much less notice. Gall thinks he has found the anterior optic tubercle belonging to the nerve of the injured eye, atrophied in every instance. Other instances are mentioned by Duges, Magendie, and Lebert, in which one or both lobes have been atrophied, according as blindness existed on one or both sides; and others, in which the atrophy extended even to the optic thalami.

These cases are of especial interest, since they show that the optic lobes (*Tubercula bigemina* in birds, reptiles, and fishes, and *T. quadrigemina* in mammals) play an important part in the function of vision; but we are not, therefore, by any means, to infer that this is their only use, since comparative anatomy demonstrates their presence in a well-developed condition in animals like the Proteus, and the blind fishes of the Mammoth Cave (*Amblyopsis spelæus*), where the eyes either do not exist, or are reduced to a rudimentary condition.

The instances which I have given in this notice are opposed to the state-

* Cruveilhier thinks that in every case of blindness in one eye, the atrophy is more especially visible on one side beyond the chiasma, but that the other nerve likewise presents a perceptible difference in size.

ment of Desmoulins, based on experiments made upon the lobes themselves, that in frogs each lobe corresponds to the eye of the same side only. Longet was not able to satisfy himself of the correctness of Desmoulins's statement, when he tested it by actual experiment.

CAMBRIDGE, MASS., Aug. 1852.

ART. X.—*Cases of Cerebral Disease.* By THOMAS F. COCK, one of the Visiting Physicians to Bellevue Hospital, New York.

HAVING recently met with several cases of cerebral disease, I have ventured to place them before the profession, with an apology for the imperfect histories, which deprive them of a portion of their value. The circumstances under which patients exhibiting this form of disease enter a hospital, necessarily preclude any accurate account of their previous ailments, while the dulness of intellectual power during their stay, prevents an exact appreciation of symptoms; while not unfrequently the autopsy alone discloses lesions, of which the history affords no signs. The *post-mortem* examinations have been carefully conducted, and, if not minute, have at least the merit of having been recorded on the spot. One case of well-marked ramollissement which presented itself in July, I have omitted simply because no history whatever could be traced.

The case of gangrene is worthy of attention on account of its rarity.

CASE I.—*Cerebral Phlebitis. Otorrhœa.*—Saturday, Sept. 14, 1850, was called to see Mr. P. W., a merchant, aged 35, of regular habits and tolerably good previous health. Complaining of severe headache. Inquiry into his history elicited the information that his usual health was pretty good. That at five or six years of age he had a purulent discharge from the right ear, which was attributable to no recollected cause. Six years since he had intermittent fever. Within the past year the otorrhœa recurred, and for its relief he has been accustomed to use a syringe, and to drop in Scarpa's acoustic oil. Four weeks since, this discharge, which was at times very offensive, ceased, and has not since recurred.

On Thursday, Sept. 12, he consulted a physician, who advised warm applications to the ear, and some cathartic pills.

Present condition.—The patient complains of severe pain in the right ear, which extends to the temple, but not over the scalp; there is no discharge from the ear; hearing is impaired; tongue heavily coated with white fur; stomach very irritable; rejecting almost everything; pulse nearly 100; his manner of speaking struck me as unnatural and hurried, but this is said to be habitual. Bowels opened freely from the pills.

I had not long before seen an analogous case, with Dr. Metcalfe, which is recorded in the *New York Journal of Medicine*, vol. xiii. p. 335, and was led to apprehend a similar condition in the patient before me; with that view leeches were applied to the right mastoid process, to be followed by a fomen-

tation of stramonium leaves, and, to quiet the irritability of the stomach, an effervescent draught was directed.

On the 15th, the symptoms were abated in violence, but the nausea and pain continued in a less degree. During this day he had a chill. The bowels were kept open with salts and magnesia; a blister applied behind the ear; and an anodyne of hyos. et camph. directed for the night.

On the 16th, in the morning, he was somewhat relieved; and at my evening visit he had less pain, though the fever continued; the bowels had been freely opened, the evacuations being mucous, and of a greenish colour. Dr. Cock, Sen., my father, saw the patient this evening. I was sent for at night to see him, and found him in a severe chill, which lasted about half an hour, during which his face and nose were cold, while the extremities were warm, or rather hot, and this state was not succeeded by perspiration. In the course of the day (Sept. 17) he had another chill, though not so violent. In this connection it may be stated, that he had been spending some little time in a malarious district, and this circumstance made the import of the chills more doubtful, viz., whether to assign them to miasmatic influence or to pyæmia. At this time Dr. Parker saw him, in consultation. Leeches were again applied behind the ear and to the temple, and a blister to the nape of the neck. By these measures he was much relieved.

Inquiry was instituted as to the probability of meningitis. There was no flushing of the face, no increase of pulsation of the carotid on the affected side; the patient bore forcible jarring of the head without inconvenience; there was no intolerance of light or sound; no incoherence or delirium at any period; the pulse throughout was soft and frequent, ranging from 100 to 120.

No special note is recorded of his case for two days, owing to a pressure of business, but the symptoms were not materially altered. A chill was noticed on each day, occurring irregularly as to time. An anodyne was given each night.

On the evening of the 20th, however, symptoms of exhaustion became manifest. I found him, at my visit, upon the close stool, in which position he had fainted. The plan of treatment was changed, and stimulants with nutrition administered during the night.

Saturday, Sept. 21. He was found with a very feeble pulse; tongue brown and dry in the centre; sordes on the teeth; the stomach is retentive, but he has become exceedingly restless, while his mental powers are unimpaired. It is extremely difficult, however, to convince him of the danger of his situation. About 10 A. M. his condition demanded the most energetic exhibition of stimulants, together with means of sustaining animal heat. Accordingly, brandy in various forms, beef-tea, &c., were freely used, and artificial heat supplied. The stomach retained all that was given; he was in a state of constant jactitation; the hands and arms, as far as the elbows, were cold and clammy; the pulse at times almost imperceptible. During this day Dr. Cheesman was added to the consultation.

22d. The stimulants had been pursued all night, without permanent advantage, and the same plan was continued through this day. Intervals of alleviation occurred, but no radical improvement. He continued to swallow until about 5 P. M. At 6 he was in *articulo mortis*, the pupils dilated, and the pulse gone at the wrist, and at 6½ he expired.

Autopsy. Sept. 23. The brain only was examined. The sinuses were much congested; about four ounces of serum were found in the ventricles; no lesion was noticeable until the right lateral sinus was reached; this was filled with a

clot semifluid at one end, having a gangrenous odour; on the cerebellum was a dark mark, corresponding to the diseased vessel, but it did not extend into the substance; no caries of the bone was discovered; the internal ear contained pus; the meatus externus was remarkably dry.

It is a matter of much regret that the examination was not prosecuted farther.

CASE II.—Phlebitis consequent on Otitis.—This case occurred in the service of Dr. Alonzo Clark, and is extracted from the hospital register. The account being more accurate than in my own notes.

John Beton, æt. 20, Scotland, a shoemaker, was admitted into Bellevue Hospital October 24, 1850. Constitution delicate; habits temperate. He entered a surgical ward, but was subsequently transferred to the medical department.

Condition.—He has otorrhœa of the right ear, which has existed for the past eight or nine years; the discharge and pain being always aggravated by exposure to cold and moisture.

History.—He states that eight days previous to admission he slept in the open air, and the next day had a chill, succeeded by fever, and that, up to the time of entrance, he complained of lassitude, fugitive pains in the head, back, and lower extremities; and general indisposition to exertion of any kind. On the day after the first chill he had a second, and also on the 26th and 27th, at which time he was transferred to a medical ward, the case being regarded as typhoid fever. Pulse 140, small, and soft; tongue dry, and thickly coated with a dark-brownish fur, and reddened around the edges; bowels constipated.

Treatment.—He was ordered to have half an ounce of brandy every hour, and two grains of quinine every second hour. Throughout the progress of the disease he exhibited morbid tenderness of the surface, crying out when pressure was made either on the abdomen or chest. His intellect appeared somewhat dull, though, when questioned, he answered rationally, and there also existed a great deal of nervous restlessness; he was continually pulling up the bedclothes. The same treatment was continued, but without avail; and on the 29th he died.

Thirty-six hours before death he sank into a state of collapse, the pulse almost imperceptible, and the surface cold; but was partially revived by the free use of brandy, and the application of sinapisms; which state recurred twelve hours before death, and continued until that event.

Post-mortem.—On opening the brain, its surface was found much congested, three or four ounces of blood escaping. The arachnoid was a little raised from the surface of the brain by serous effusions slightly opaline. On the inferior surface of the right lobe of the cerebellum there was a dark stain, half an inch by an inch in extent, which did not penetrate below the surface, but was confined to the membranes; the substance of the brain was in the slightest degree softened, not discoloured. On the petrous portion of the temporal bone there was a patch one and a half inches long, and half an inch wide, of discoloration; its central portion white, as if by effusion of lymph or pus, and surrounded by a dark areola. On the removal of a portion of the cranium, comprising a part of the parietal and temporal bones of the right side, there was found a discoloured portion of the dura mater covering a cavity, the bone being destroyed to one-fourth of an inch in depth. In the soft parts, behind and beneath the angle of the jaw, there were dark, discoloured spots, extending downwards and along the course of the vessels.

On the inner surface of two veins of moderate size was a white discoloration, and thickening of the internal membrane, believed to be the result of phlebitis, which had its origin in the smaller twigs coming from the diseased bone. *Liver* normal in appearance; rather small; no abscesses. *Lungs*—*left* somewhat adherent posteriorly; *right* free from adhesions. Both lungs were covered with a number of small, dark spots; several of which had suppurated under the pleura, one or two in the centre. These were regarded as commencing metastatic abscesses. The blood was found generally in an unusually fluid state, though coagulated in the larger vessels.

CASE III.—*Gangrene of the Brain.*—Michael Lyons, æt. 22, Ireland, labourer, of robust constitution and temperate habits, entered Bellevue Hospital August 16, 1851, with purulent and offensive discharge from the right ear, together with diarrhœa of three or four days' duration. Considerable difficulty was experienced in obtaining even an imperfect history of his case, owing to the dull state of his intellect, and excessive deafness. His statement was, that eight months since he had a cold, which was followed by a severe pain in the right ear; that this pain has continued, with varying severity, until the present time. A few days after the commencement of the pain, he felt a sudden snap, as though something had burst in his ear, and since then there has been a discharge from the external meatus, which has recently become of a fetid odour. At times he has heard a roaring noise in the ear. The deafness has been gradually increasing for the last two months. For the last four days he has had a sharp pain behind the ear and across the forehead.

The recollection of the preceding cases was too fresh in my mind not to fear a similar state in the present case. The history, the dull, lethargic aspect, the slow, hesitating, and imperfect speech, the constant yawning that interrupted his replies to my questions, all combined to induce a similar diagnosis. With all this, there was no lesion of vision, of motion, or of sensation; his pupils were natural in size; tongue moderately coated with a white fur; and pulse 75.

Of the treatment of the case it is unnecessary to remark farther than that it was directed with a view of checking the diarrhœa, and re-establishing the otorrhœa, which became suppressed on the 20th. The first was accomplished readily; all treatment of the cerebral symptoms proved nugatory.

The night following his admission he had a chill, followed by moderate reaction; and on the next day complained of violent pain across the forehead; the other symptoms remaining as before.

On the 20th, it is recorded, that the discharge from the ear ceased, and all attempts to re-establish it proved unavailing. Soon afterwards the patient commenced to vomit; which, after two hours' continuance, was arrested by creosote and the application of a sinapism to the epigastrium.

22d. On the evening of the 21st, as night approached, he became delirious, and continued so all night. At the time of the usual visit he was asleep. The surface bathed in profuse perspiration; pupils partially dilated; tongue moist, with a yellowish-white fur; pulse 100; respiration 20, and even. When roused from sleep, he answered incoherently.

23d. Condition not altered; but toward night delirium became violent, and restraint was necessary to keep him in bed; the pulse was frequent and feeble; the pupils widely dilated. Death occurred at 4 A. M.

Post-mortem seven hours after death.—Externally, abundance of frothy, dirty, yellowish-green fluid exuding from the nostrils, similar to what had been vomited previously.

On removing the calvarium, the scalp and membranes were markedly congested. The examination of the brain was commenced without removing the cerebral mass, by making horizontal sections. At the first incision an exceedingly fetid odour was noticed. Just over the ventricles the brain was softened, so much as to rupture, and permit the exudation of their contents; a dirty, greenish, sero-purulent fluid filled both cavities, and had imparted a dark-green colour to the walls of the ventricles, which tint extended about a line in depth; softening was also noticed. The next incision on the right side, after opening the ventricle, revealed a dark-green mass, in size three inches by two, resembling in appearance and odour a gangrenous lung; the smell, though very fetid, was not quite as pungent as pulmonary gangrene. This dark portion had a well-defined edge, which seemed elevated, and around its border the cerebral tissue was soft. The disease did not extend to the inferior aspect of the cerebrum. The brain was now removed, and, at the base sero-purulent fluid, of a yellow colour, existed abundantly. Pus was also found beneath the arachnoid, on the inferior surface of the cerebellum. The dura mater over the petrous portion on the right side appeared dark, but on removing the membrane, the subjacent bone was not diseased on the surface; the lateral sinus was filled with pus. The bone was removed and sawed open, but no apparent disease of its structure was found. Pus existed in the meatus auditorius. The right jugular vein was filled with fluid blood. The lungs were examined with a view to the discovery of metastatic abscesses, but none were found; and none existed in the liver. The other viscera were examined without detecting further morbid changes.

CASE IV.—*Abscess of the Brain.*—James McDonald, æt. 40, Ireland, labourer, habits intemperate, admitted August 14, 1851.

History imperfect. A few days before admission, while at work in the sun, he was suddenly seized with a severe pain in the forehead, having, according to his own account, been in good health previously. The pain has continued to the present time without mitigation. There is no noticeable constitutional disturbance; the pulse is quite normal as to rhythm and frequency; the intellect though rather dull gives no aberration, and no paralysis exists; his only complaint is of deep-seated pain in the head. In appearance he is robust and healthy.

The record gives no additional evidences of his disease until September 1, save that the patient walks about the ward and in the yard compressing the head with both hands. The treatment pursued in the meanwhile has been local depletion from the head succeeded by counter-irritation; free evacuations from the bowels, together with the internal use of antimonials.

On the 1st of September it is recorded that the pain is increased, and the appetite begins to fail; the patient sits by his bedside holding with both hands to the head, and resting his elbows on the bed.

From this time the intellect became more and more obtuse; he ceased to complain of pain, and also to answer questions, though he murmured incoherently. The pulse diminished to fifty-five in the minute; and without other marked change he died September 5.

Autopsy seven hours after death.—On removing the scalp, a portion of the frontal bone about two inches by one in extent is completely denuded of periosteum, and irregularly carious through part of the external table. (There is no evidence of external injury, and previous inquiry had elicited no information bearing on this appearance.) The internal table, with the exception of increased vascularity, exhibits no mark of disease. The meninges are considerably congested.

Corresponding to this diseased bone, the dura mater is thickened to about one-eighth of an inch, and adherent to the bone below the section made in removing the skull-cap, and also to the brain beneath over a space about one and a half inches in extent. The subjacent brain is soft and almost diffuent in consistence; and this change involves not only the anterior surface of the left hemisphere, but the right is also softened. On cutting into the left lobe of the brain at this spot, an abscess of a size sufficient to hold a large black-walnut exists which is filled with thick, greenish-yellow pus; the walls of this abscess are of a brownish-white, with minute dark spots interspersed, being of a quite firm texture, while the two-thirds of the anterior portion of this hemisphere are remarkably free from blood, and quite soft; softening also is found involving all of the fornix and the posterior cornu of the right ventricle; the tissue of the brain in these situations admitting of being washed away by a stream of water poured gently on it.

The following case is inserted by permission of Dr. Metcalfe, in whose service it occurred. I saw the patient a few times, but possess no record of it. The hospital register is the source whence the case is taken:—

CASE V.—Ramollissement with Tumours in the Brain.—George Jackson, æt. 25, New York, a clerk, entered Bellevue Hospital July 8, 1851.

The patient on admission was unable to give much account of his illness. He merely complains of severe pain in the back part of his head. His brother states that for two years past he has suffered from severe pain in the head, and has had occasional spasms of the extremities. Opium has been taken in large quantities to allay this distress. For several months he has been partially insane. During the night the patient is very restless, and wanders about the ward getting into the vacant beds.

He is much emaciated; his complexion sallow; pupils sluggish; pulse 80, and full; tongue coated white, and moist; bowels constipated. To take a purge of calomel and rhubarb.

14th. Patient has become more quiet; does not leave his bed; bowels not moved since admission; pain in the head undiminished. Pulv. purgans to be followed by an enema.

17th. Lies upon his back in a state of partial stupor from which, however, he can be aroused; no alleviation of pain; he has no contraction of the flexor muscles, but is continually rotating his thighs; pulse 90; no evacuation. Croton oil in doses of one drop every four hours until purged.

18th. Three drops of the oil opened the bowels freely. The patient's vital powers have been gradually declining since admission.

Died July 19, at 2 A. M.

Post-mortem 11 hours after death.—Body pale; discoloured in spots from decomposition. Dura mater separates readily from the brain. The vessels of the brain are not more than usually congested. On incising the cerebral mass, the puncta vasculosa are somewhat more numerous than usual; the tissue as first cut is of normal consistence, but the left corpus striatum is markedly softened. The ventricles contain no abnormal amount of fluid. At the anterior part of the fissure of Sylvius of the left side is a hard tumour of the size of a filbert surrounded by a softened portion of brain. To the left, and half an inch from this is another tumour of the same size; these tumours when cut present a yellow surface. At the anterior part of the left corpus striatum is a tumour like those described above, except that the yellow part in the centre is softened. The anterior part of the right corpus is completely

destroyed by softening; there is also a tumour imbedded in it like those of the left side, but not softened.

In the superior part of the right lung a few tubercles exist, and a portion of the lung exhibits the first stage of pneumonia. The other organs are healthy.

CASE VI.—*Tuberculous Abscess of the Brain.*—Robert Graham, æt. 34, a native of England, by employment an engineer, was admitted August 29, 1851.

The patient is of a scrofulous habit. Has had the usual diseases of childhood. During the summer of 1835 had intermittent fever of a quotidian type which recurred in 1850. Five years since he had a cough which continued about three weeks, attended with slight expectoration, and on one occasion with hemoptysis to a slight extent. Neither cough nor raising of blood has recurred. During the winter of 1850 had an attack of acute articular rheumatism which lasted two weeks. In May, 1851, he entered this hospital with chronic rheumatism, complaining at the same time of a dull, heavy pain in the head, and imperfect command over his muscles. In the course of the past six weeks this weakness in the extremities has increased to partial paralysis, most marked in the right arm, the temperature of which also is considerably less than that of the left. The cephalalgia has continued with some variations since May.

When admitted on the present occasion, he complained of severe pain in the head with loss of muscular power on the right side. The expression of his countenance is dull and heavy and almost fatuous, though when addressed he is able to give a connected account of his feelings, &c. The eyeballs are quite prominent, the pupils sensible to light, equal, and of normal size.

During the day, he is inclined to doze, and lies with the lids partially open, exhibiting the white of the eye only.

On the right side of the neck is a scrofulous cicatrix; and the fourth metacarpal bone has been removed for disease of its structure. Pulse 60; tongue coated with a thick white fur; bowels regular; appetite moderate.

September 5. Pain in the head severe, otherwise no change. Blister to back of neck.

9th. Pain has somewhat decreased; appetite begins to fail; bowels regular; strength fails; has incontinence of urine.

10th. The control over the right arm is diminishing; it hangs almost powerless; and in addition loss of sensation is recognized. The head inclines towards the left shoulder.

11th. Last evening while attempting to cross the ward he fell in the effort.

12th. Is sitting by the bedside, his head inclined towards the left shoulder; the expression of countenance exhibits more anxiety. In some of the urine which has been collected, a copious deposit of earthy phosphates is found.

13th. Died comatose at 10 A. M.

Autopsy two hours after death.—On removing the skull-cap immediately beneath the left parietal boss, the dura mater was adherent to the skull over a space about three inches in diameter, and this so strongly that it tore from the rest of the membrane, disclosing a cavity filled with dirty, yellowish, semi-fluid, inodorous pus about two inches in diameter. The bone corresponding both on the external and internal surface is carious. In the vicinity of the abscess the dura mater is thickened, and where not torn up by the violence used in removing the skull-cap the membrane adheres. The abscess pene-

trates about an inch into the substance of the brain, and its walls are indurated in a marked manner. Over the posterior cornu of the left ventricle the cerebral tissue is softened in a moderate degree. The brain is rather anemic, the puncta vasculosa but few in number. At the base about two ounces of serum remains on the removal of the brain.

Heart flabby, weighs nine and a half ounces; the valves normal. Lungs, both were adherent to the costal pleuræ by ancient deposit of lymph; the adhesions being most extensive on the right side. At the summit of the left, numerous dormant sub-pleural tubercles are found. Emphysema of both lungs. Liver, the convex surface adherent to the adjacent peritoneum. Throughout its substance numerous deposits of tubercles exist; in some, the consistence is soft, in others, calcareous; the size varies from one and a half inches in diameter to that of a pea; in some of the largest, a depression on the surface indicates their presence; the sulcus over the largest deposit was three inches in length by two in depth. Weight of liver three pounds thirteen ounces. Spleen weighs sixteen ounces; beneath the capsule numerous flattened tubercles exist, and the whole substance of the organ is studded with minute tubercles.

Kidneys, the left weighs five ounces; the right four and three-quarter ounces; and in the latter a single tubercle is found.

ART. XI.—*Urinary Deposit of Epithelial Nuclei.* By JOHN BACON, Jr., M. D., Chemist and Microscopist of the Mass. General Hospital. [Read before the Boston Society for Medical Observation, February 2, 1852.]

THE presence of free epithelial nuclei in the complex urinary sediments attending those renal affections which are classed under the name of Bright's disease, is briefly noticed by several recent writers on the microscopic pathology of the kidney; but the occurrence of a distinct deposit composed of them has not, so far as I am aware, been described. In the early stage of a case of albuminuria, while the amount of albumen in the urine was very small, I have on two occasions observed sediments, which, under the microscope, consisted chiefly of spherical bodies, bearing a considerable resemblance to pus globules, and liable to be mistaken for them in a cursory examination.

These bodies are nearly or quite spherical; they vary little in size, the average diameter being $\frac{2}{1000}$ of a millimetre, or $\frac{1}{3175}$ of an English inch. A few, which are granular on the surface, are as large as $\frac{1}{100}$ of a millimetre, or $\frac{1}{2540}$ of an inch. Their surface is generally smooth, and they contain several (usually 8 or 10) large dark granules, with bright centres, but no nucleoli other than these. By transmitted light, they appear of a yellowish colour, and less transparent than pus globules, like which, they move freely in the fluid containing them, rolling over and over when it is agitated. Cold water, alcohol, and ether have no action upon them: in boiling water they

are more or less completely broken up. Neither acetic acid, nor dilute nitric or hydrochloric acids affect them.

A drop of acetic acid, added under the microscope, readily distinguishes them from pus globules, which it renders very transparent and finally dissolves, disclosing the contained nuclei, usually two or three in number. These nuclei are often visible in the globule without the aid of any reagent. Pus globules have a faint yellow tinge, appearing nearly colourless when seen singly. The surface is usually rough and granular. They are variable in size, and generally larger than the epithelial nuclei, averaging $\frac{1}{100}$ of a millimetre in diameter. The contained nuclei are about one-third as large as the globule: when single, the nucleus may reach half the size of the globule.

The deposit formed in the urine by the epithelial nuclei has some resemblance to a purulent sediment, but is darker and more readily diffused. In a strong light, it appears to the naked eye composed of innumerable brilliant points, which float freely in the fluid. In the first specimen examined, the nuclei were accompanied by a few pus globules, pavement epithelium cells, and exudation corpuscles. In the second specimen, four days later, a considerable deposit occurred, mainly composed of the spherical nuclei. Many similar nuclei were seen, inclosed in very transparent cells, scarcely larger than the nucleus. The free nuclei and the cells were often collected in groups and entangled in what appeared to be mucus. A few filmy membranous casts of the tubuli uriniferi, containing scattered nuclei, were observed; also pavement epithelium, and pus or mucous globules. Some of the epithelium cells appeared swollen and loaded with fat.

Each of these specimens of urine contained a very little albumen in solution, but more than the presence of a trace of pus would account for; and both deposited octohedra of oxalate of lime after standing some hours. Three weeks later, the urine of this patient was decidedly albuminous, and contained a considerable deposit, mainly composed of granular matter, often inclosed in fibrinous casts of the tubuli, or forming solid, opaque cylinders. There were also spherical nuclei, resembling those described above, but generally very granular and opaque; also, pavement epithelium and numerous oil globules. This sediment presents the characters common in albuminuria.

The tubuli of the kidney are lined in part by flat polygonal cells, forming a regular pavement epithelium, and partly by smaller cells, appearing as narrow transparent borders around their nuclei. These, which are at first spherical, gradually become flattened, a change of form usual in epithelium. Many nuclei occur, not inclosed in cells: they resemble so closely, in size and other characters, the spherical bodies found in the urine, that there is no reason to doubt their identity, especially as many nucleated cells were seen in one of the deposits, similar to the smaller ones which line the tubuli. The nuclei in the tubuli differ only in being more opaque and granular than those in the urine, which were probably thrown off in an immature state.

The spherical epithelial nuclei are probably of common occurrence (in small

numbers) in various urinary deposits: they might readily pass as pus globules, under the microscope, unless their abundance or other circumstances attracted particular attention to their distinctive characters.

ART. XII.—*Crystals of Hæmatoidin in the bloody fluid from a Tumour.* By JOHN BACON, JR., M. D. [Read before the Boston Society for Medical Observation, May 3, 1852.]

IN old extravasations of blood, in the brain and other situations, it is not uncommon to find microscopic crystals, of a fine red colour, consisting of hæmatoidin, a modified form of hæmatin, the peculiar colouring matter of the blood. According to Virchow's observations, these crystals may be formed in from seventeen to twenty days after the occurrence of the extravasation. I am not aware that they have been seen in any recent effusion; but Kölliker observed the formation of crystals, which were probably hæmatoidin, within the blood corpuscles of some fishes.

In the bloody fluid obtained by puncturing a large cancerous tumour with an exploring needle, I have lately observed rhombic crystals, of a red colour, mixed with the cancerous elements, and with blood corpuscles, many of which were little or not at all altered. No coagula were seen in the fluid, which was submitted to the microscope about an hour after its removal from the tumour. It appeared to be simply a mixture of the cancerous juice with blood effused from cut vessels. The large proportion of cancerous juice probably hindered the coagulation of the blood.

The crystals seen in this fluid are rhombic tables, of a fine transparent crimson or ruby red colour, the thicker crystals being of course deeper in colour. Their edges are usually sharply defined, and the obtuse angles of the rhomb more or less rounded, giving them the most common form of the uric acid crystals deposited from urine. The largest tables measure about $\frac{1}{3} \frac{1}{10}$ of an inch across the face, and considerably less than this in thickness.

In their microscopic characters, the crystals agree perfectly with those of hæmatoidin seen in old apoplectic effusions in the brain. Hæmatin has never been obtained in crystals. Hæmatoidin, which is doubtless derived from it, occurs in oblique rhombic prisms, and also amorphous; but has not been crystallized artificially. The crystals are usually tabular, and are liable to alter quickly. The chemical properties of these two bodies differ in some respects. No chemical reactions were obtained in this instance, and the evidence of the nature of the substance rests on microscopic characters alone. On re-examining the fluid some hours later, I was surprised to find that the crystals had entirely disappeared.

ART. XIII.—*On Inoculation and Vaccination.* By JESSE YOUNG, M. D.,
of Chester, Pennsylvania.

THE efficacy of vaccination, as a protection from variola, has now, after its general use for more than half a century, become well established by general observation and the most satisfactory experience; and, therefore, to disturb the public mind on the subject, by raising quibbling doubts and theoretical objections to it, can only be attended with evil consequences. Three and a half times fifteen years have gone by since vaccination has been in general use throughout, I had almost said, the civilized world, and nearly everywhere the results confirm the confidence reposed in it. Two observers only, Drs. Gregory and Cazenave, have set themselves up in opposition to this general sentiment. Dr. Gregory admits the efficacy of vaccination performed before the fifteenth year of age, as a protection from smallpox, but maintains that after that age "another law" comes into operation, and the economy acquires a susceptibility to a first attack of smallpox; and further, that revaccination after fifteen years is useless.

Dr. Gregory, it is evident, is a much stronger advocate for inoculation than for vaccination, and considers it *almost*, if not quite, as safe. Thus he tells us that "without ordinary precaution in the choice and preparation of subjects, not more than one in 500 will terminate unfavourably." What is meant by "precaution in the choice," is, to say the least, very conjectural, in cases in which we can have no choice if we resolve not to vaccinate. What physician could say to an anxious parent: "I will not inoculate your child, because there is some constitutional peculiarity about it that renders it probable it will not survive its effects?" This would only make parents more anxious to have it done, on account of the diminished violence of the inoculated disease. But, if Dr. G. had not been blinded by his predilection for inoculation, he ought to have acknowledged that, without *cautiously choosing*, and *without any preparation*, we have an agent equally effective as a preventive, and which does not terminate "unfavourably" not only once in 500 cases, but not once in ten times 500. Again, Dr. Gregory informs us that, "had not the discovery of Jenner interfered to interrupt its extension and improvement, inoculation would have continued to this day, increasing daily in popularity." No doubt it would, if nobody else had made the discovery of Jenner. But this is special pleading. He does not pretend to argue that it would ever have been brought to that mild, simple form of affection that Jenner's is; nor does it follow that its efficacy would have been increased in preventing those frequent secondary attacks, which have always existed, and which was first definitely described and named *varioid*, about thirty years ago. At that time physicians never thought of vaccination being inferior to inoculation as a preventive from even this; nor proba-

bly had revaccination been thought of then, any more than reinoculation had. Since then, revaccination has been found advantageous, exactly as, in all human probability, reinoculation would have been found, if Jenner's discovery had not interfered with its "progress and improvement." Then, as the original vaccination has been found so perfect a substitute for inoculation, and equally, if not superiorly efficacious, ought we not to require something more than assertion, yea, positive *demonstration*, that revaccination is not equally efficacious with inoculation, before we give up the former for the latter? Probably three-fourths of those now living, and protected in any way, have been vaccinated; and how small is the proportion of deaths now, from smallpox, compared even with the period when inoculation was in vogue, and before vaccination was known? The average proportion of deaths was about *ten in 500*, or one in fifty. And now, let us go back to inoculation, instead of revaccination, and we shall keep constantly alive this hideous monster, propagating itself continually by its own poison, and if not destroying, at least subjecting to the risk of destruction, a large portion of the children that are born; because, it is well known that the varioloid, which will be the result of inoculation in about nine or ten per cent. of those protected by vaccination, *or by previous smallpox*, will, in all those unprotected, produce genuine smallpox. Previous to 1836-37 (see *Watson's Lectures*), Dr. Gregory appears to have been satisfied with revaccination. As quoted by Watson, his opinion *then* was, that "we have sufficient facts before us to state with confidence that it need never be recommended prior to the tenth year of life; and that the age best fitted for it is from the age of puberty to that of confirmed manhood." *Now*, however, he says, it is useless, although the evidence then was sufficient to warrant him in making the statement with "confidence."

The following cases will assist in showing that vaccination, when performed for the first time, after fifteen years of age, is equally effective in preventing smallpox, as when done at any other age:—

CASE I.—In April, 1828, Mr. L., a journeyman paper-maker, unprotected, took smallpox from the rags (in the mill) which had been imported from Leghorn. He died on the twelfth day of the disease. He was unmarried, and lived with his mother and two brothers, none of whom were protected. His mother was over fifty years of age, and both brothers were past the age of puberty. As soon as the nature of the attack was ascertained, his mother and brothers were vaccinated, and all took the vaccine disease finely, and neither of them was affected with variola.

In this case, Dr. Justus Dunott, late of the city, now of Delaware State, assisted in attendance on the case, and also subsequently, in dressing and preparing the corpse for the last rites of humanity. The Dr. informed me that he had been vaccinated, and never had had smallpox; he entirely escaped infection. I do not recollect his informing me at what age he was vaccinated, but that is immaterial, if I understand Dr. Gregory's theory. If

done after fifteen years of age, when the "new law comes into operation," the vaccination affords no protection. If done before this law comes into operation, it is ineffectual afterwards, and inoculation must be practised to insure safety; but it was not ineffectual; and it thus furnishes an additional case to those above, of the complete preventive power of the agent.

CASE II.—The writer of this article had been inoculated when some five or six years old. He is informed by the only person capable of giving correct information on the subject that he had it mildly, but satisfactorily to the attending physician. Twenty years subsequently, he was vaccinating some children, and after using the lancet for that purpose, he immediately used it to remove the point of a briar from the back of his hand; the consequence was that the vaccine virus took effect, and it ran through its regular stages. This, fortunately, occurred before the occurrence of the above case, and was most indisputably the preventive that saved him from an attack of smallpox. This revaccination too was after I was *twenty-five* years of age. I have on more than a dozen occasions revaccinated myself since, and never produced anything like a vaccine pustule. This case proves two points at present under consideration, viz., that revaccination after fifteen years of age was effective; and that Dr. G.'s new law operates in cases of inoculation so as to render it ineffective, just as it does after vaccination. Why, then, ought it to be preferred to vaccination? The only law in operation is the very natural one that the original affection was not *deep* enough to change the constitution (or whatever other more appropriate name it may be called by), sufficiently to protect, except for a few years, exactly as is the case in occasional cases of cowpock.

CASE III.—Mr. C., also a journeyman paper-maker, took smallpox from imported rags in the mill. He was entirely unprotected. He died on the thirteenth day of the disease. His wife, aged 24 years, and infant, aged three weeks, were both unprotected; they were at once vaccinated, and both entirely escaped smallpox. Strange as it may appear, the only individual who took the disease from this case was a middle-aged gentleman who had been *inoculated*, although many adults who had been vaccinated in their minority, and were revaccinated, were equally exposed with this gentleman; and every one escaped.

CASE IV.—Mr. E. was vaccinated in the 19th year of his age, for the first time, about thirty years ago. Some years afterward, he married a lady who had been inoculated in her youth, and had the disease satisfactorily. He and she became equally exposed to the contagion of smallpox. In a few days after this, she was delivered of an infant; and in a few days more, she became alarmingly sick, with all the symptoms of severe smallpox, as afterwards became manifest. Her infant was at once vaccinated, and escaped. Her husband, although equally exposed with herself at first, attended faithfully to her during her sickness, and escaped entirely.

CASE V.—Mr. C. S. had been vaccinated *twenty-seven* years before he was attacked with smallpox, or rather varioloid. His sister, two years younger than he was (and they were both under five years old), was vaccinated at the time he was. She was now married, and had four children, all vaccinated, and was exceedingly alarmed, not only for her own safety, but that of her

children. I revaccinated her, and urged her to go herself, and to take her children and expose them, as she saw fit, to the chance of taking it. She did so, till she was perfectly satisfied on the subject, and not one of them took the disease; neither did she take the vaccine. The first had protected her twenty-seven years, and will doubtless continue to do so. Are we to suppose that any new law came into operation in the one of these cases (after fifteen), and not in the other? A law that is subject to about ninety or something more exceptions in one hundred cases, and that proportion extending through tens of thousands of cases (witness the revaccinations in the Prussian armies, a few years ago), cannot be a general one, but a very *particular* one indeed. Had this brother been revaccinated, he would undoubtedly have taken the vaccine, and would have escaped the varioloid, without any other presupposition than that he had not had the vaccine sufficiently originally, and that the sister had. In the family with this man was an apprentice, in the 20th year of his age, who had been vaccinated before he was old enough to recollect it. I examined the cicatrix on his arm, and assured him it was not necessary to revaccinate him; he was fully exposed to it, and yet never was affected by the exposure.

CASE VI.—Some ten years ago, I attended a young man, in his 23d year, with a violent attack of what proved to be varioloid. His case was marked with all the precursory signs of violent confluent smallpox; but on the tenth or eleventh day, when the secondary fever ought to have appeared, all the symptoms were mild; no fever appeared, and in a few days more he was well. He had been vaccinated about twenty years before. He lay sick in the house of an aunt, aged near 40, who had been vaccinated in her early youth, and her two little children had recently been vaccinated. I examined the cicatrices in her and her children; assured her of the entire safety of them all; still, to allay her fears, I revaccinated them, but without any effect; they all escaped infection. In this instance, it protected the mother, after the lapse of between thirty-five and forty years.

CASE VII.—An infant, aged seven months, not vaccinated, of Mr. J. B., contracted smallpox in Philadelphia, in November, 1851. A few days after returning home, it sickened, and an eruption appeared, which kept increasing in size until the third day, when I was requested to see it. The mother would scarcely believe that it was smallpox when informed of it. She had two other children, both unprotected. I at once vaccinated them, assuring her it was extremely doubtful about its doing any good. On the third day after, both appeared to have taken the vaccine. On the sixth day, in the youngest of the two the pustule appeared still to be progressing; but in the other it appeared to have come to a stand a day or two perhaps previously. He was complaining of headache and being unwell. I introduced more virus below the former pustule, hoping to urge it on; but it made no further progress, and in a day or two more he had a pretty copious eruption. But, after the eruptive fever subsided, his suffering was at an end, save only from the soreness of the pustules; he was lively, and about the house throughout the whole progress of the affection; no secondary fever attended, and he escaped almost unscathed. His little sister's arm did not appear to progress after the sixth day. In three or four days more, she had a slight eruption, and suffered much less than even her brother did. Here was a struggle between this giant and pigmy which we do not often have an opportunity of witnessing, particularly in the country, in this our day. I

watched them with much interest. These little red spots, the result of vaccination, maintained their ground, neither advancing nor receding, but apparently making a strong effort to pass onward through their natural stages, but withheld by some more powerful adversary. The two diseases passed off together; neither the vaccine nor the varioloid perfecting the scabbing process in either case, but the latter rather more perfectly in the boy than in the sister. The vaccine scabs were crumbly and of a light colour; the others were darker, but not of the firm, solid consistence they assumed in the infant. The mother of these children had had the vaccine disease when a child, and now escaped smallpox entirely. She had not been revaccinated. The father had not been protected in any way until he was twenty-five years old, and then he was vaccinated. He is now thirty-five. He entirely escaped all variolous affection, and remained well throughout.

Other cases might be referred to, but these alone are sufficient to satisfy the writer of the complete protection afforded by vaccination, let it be performed at what period of life it may; and also, that no new law comes into operation at or after the fifteenth year, with respect to it, that does not apply with equal force to inoculation. Experience, however, has shown that advantage does result from revaccination, because about nine or ten per cent. retake the disease. Now, how many cases are on record of persons taking smallpox after *revaccination*? If one is to be found, I am not aware of it. Certain it is, I never have seen one, although numerous instances could be cited in which exposures to variolous infection had taken place. It is a well-established fact that persons who have had the genuine disease once will not take it the second time; also, that every person who can be subjected to it is subject to smallpox, if exposed to its infection; and if not subject to one, neither will they be to the other. These axioms, no well-informed physician, it is presumed, will controvert. Then if nine-tenths of all the vaccinated are thus secure, certainly it is much more philosophical to conclude that the remaining tenth (or thereabouts) who are subject alike to the effects of vaccination and of exposure to variolous infection, will be equally protected by the former as by inoculation (since it has protected equally the other nine-tenths), than to call up any new law into operation for the purpose of bolstering up the latter, although it may be a favourite. About the same proportion of persons who have been inoculated are subject to varioloid as of those who have been vaccinated; therefore, reinoculation is equally necessary with revaccination, to insure entire safety. It follows certainly, then, that the probabilities of a like safety, resulting from a reoperation of whatever kind, are entirely equal; and then it resolves itself into a choice between the production of a most dangerous, noisome, filthy disease, from which very many deaths result, and a mild, benign affection that rarely sickens, and that, I had nearly said, never kills.

Since writing the above, I have conversed with Dr. William Gray, of Chester, one of our oldest practitioners, on the subject of Dr. Gregory's new law, and his experience and observations concerning vaccination and revaccination. He says he has no belief at all in the new law; that he is an advo-

cate for revaccination, and has performed the operation hundreds of times in adults and in minors; that he finds about one in ten or a dozen take the disease effectually; and, to test that matter, he has taken the scabs thus obtained, and used them with the most satisfactory results; that he has not known any person have smallpox after revaccination; that he has full faith in vaccination at any age beyond fifteen, or before it; and that his confidence in it increases as his observations and experience increase.

I have no hesitation in saying that all the physicians of our county agree entirely in the above opinions; and that there is not one among them who could be prevailed upon to inoculate instead of revaccinate, at any age. No occurrence of whatever kind has taken place here to shake the confidence of the people, nor the physicians, in its efficacy. On the contrary, all experience has had directly the contrary effect. Twenty-five or thirty years ago, it was distrusted very much by the populace, and nothing but the firmness of the physicians prevented inoculation being extensively resorted to; now, all this has subsided, and I presume, from general knowledge on the subject, that it would require weighty arguments to induce any of the intelligent part of our community to submit to inoculation. In this quiescent state of public feeling, how ridiculous would it be to disturb it, without the most convincing evidence of necessity for so doing. Let but the physicians begin to talk about the necessity of inoculation at or after fifteen years of age, and farewell to all confidence in vaccination. I trust, however, that such an accumulation of evidence will be produced, now that the question has been raised, as will prove that vaccination is no humbug, and that all the physicians of the last fifty years are not the dupes which a contrary conclusion would prove them to be. With the view of contributing a mite towards this result, the foregoing article has been penned.

CHESTER, May 31, 1852.

ART. XIV.—*Case of Hermaphroditism, involving the Operation of Castration and illustrating a new principle in Juridical Medicine.* By S. D. Gross, M. D., Professor of Surgery in the Medical Department of the University of Louisville.

THE following case, which came under my observation in 1849, will, if I mistake not, prove both novel and interesting to my professional brethren. So far as my information extends, there is no account of any operation for a similar object upon record.

The subject of the case, at the time I first saw her, was three years of age, having been born on the 10th of July, 1846. She had always, up to this

period, been regarded as a girl, and had been so pronounced at her birth by the accoucheur. At the age of two, however, she began to evince the tastes, disposition, and feelings of the other sex; she rejected dolls and similar articles of amusement, and became fond of boyish sports. She was well-grown, perfectly healthy, and quite fleshy. Her hair was dark and long, the eyes black, and the whole expression most agreeable. A careful examination of the external genitals disclosed the following circumstances: There was neither a penis nor a vagina; but, instead of the former, there was a small clitoris, and, instead of the latter, a superficial depression, or *cul-de-sac*, covered with mucous membrane, and devoid of everything like an aperture, or inlet. The urethra occupied the usual situation, and appeared to be entirely natural; the nymphæ were remarkably diminutive; but the labia were well developed, and contained each a well-formed testis, quite as large and consistent as this organ generally is at the same age in boys. Her hips and chest, thighs and superior extremities, were perfect.

It being apparent, from the facts of the case, that it was one of malformation of the genital organs usually denominated hermaphroditism, the question occurred whether anything could or ought to be done to deprive the poor child of that portion of the genital apparatus which, if permitted to remain until the age of puberty, would be sure to be followed by sexual desire, and which might thus conduce to the establishment of a matrimonial connection. Such an alliance, it was evident, could eventuate only in chagrin and disappointment, if not in disgrace, ruin of character, or even loss of life. Certainly, impregnation could never occur, and even copulation could not be performed, except in the most imperfect manner.

I need not say that I gave the subject all the consideration and reflection that I was capable of bestowing upon it. I was deeply sensible of the responsibility of my position. A new question, involving the rights and happiness of my little patient, and the dearest interests of her parents, was presented to me. I examined the case in all its bearings and relations—moral, physiological, and juridical; I appealed to the records of my profession for a precedent, and I sought the counsel of medical friends. The parents were anxious for an operation; they were intelligent, kind, and tender-hearted, and were willing to sacrifice everything for the welfare of their child. Their only object was to save it from future suffering and misfortune. My own mind was made up; but, before I proceeded to take any further steps, I determined to consult my excellent friend and colleague, Professor Miller, in whose judgment and integrity every one who knows him has the utmost confidence. He saw the child and examined her. He viewed the case, as I had previously, in every possible aspect, and his conclusion was, that excision of the testes was not only justifiable but eminently proper under the circumstances; that it would be an act of kindness and of humanity to the poor child, standing as she did towards society in the relation, not of a boy or a girl, but of a neuter, to deprive her of an appendage of so useless a nature; one which might, if

allowed to proceed in its development, ultimately lead to the ruin of her character and peace of mind.

Backed by such authority, I no longer hesitated what course to pursue. I performed the operation of castration on the 20th of July, 1849, aided by my pupils, Dr. D. D. Thomson, of this city, Dr. Greenburg R. Henry, of Burlington, Iowa, and Dr. William H. Cobb, formerly of Louisville, now of Cincinnati. The little patient being put under the influence of chloroform, I made a perpendicular incision, about two inches in length, into each labium down to the testis, which was then carefully separated from the surrounding structures, and detached by dividing the lower part of the spermatic cord. The arteries of the cord being secured with ligatures, the edges of the wound were brought together with twisted sutures, and the child put to bed. Hardly any blood was lost during the operation. About two hours after, the left labium became greatly distended and discolored; and, upon removing the sutures, the source of the mischief was found to be a small artery, which was immediately drawn out and tied. No unpleasant symptom of any kind ensued after this, and in a week the little patient was able to be up, being quite well and happy.

The testes were carefully examined after removal, and were found to be perfectly formed in every respect. The spermatic cords were natural.

I have seen this child repeatedly since the operation, as her parents live only a few squares from my office, and have carefully watched her mental and physical development. Her disposition and habits have materially changed, and are now those of a girl; she takes great delight in sewing and housework, and she no longer indulges in riding sticks and other boyish exercises. Her person is well developed, and her mind uncommonly active for a child of her years.

I would fain present this example as a precedent in similar cases. The reasons which induced me to recommend and perform this operation in the instance before me have been already mentioned, and now, after a lapse of three years, I have no cause to regret the undertaking, or to think that I acted harshly and inconsiderately. If the records of surgery and medical jurisprudence are silent upon the subject; if the learned doctors of the Sorbonne, the fathers of the Royal Academy of Paris, and the Fellows of the Royal College of London have left us no precepts; and if the experience of the present day furnishes no examples; all this, and much more, does not prove that the practice here recommended is not perfectly just and proper, and vindicated upon every principle of science and humanity.

A defective organization of the external genitals is one of the most dreadful misfortunes that can possibly befall any human being. There is nothing that exerts so baneful an influence over his moral and social feelings, which carries with it such a sense of self-abasement and mental degradation, or which so thoroughly "maketh the heart sick," as the conviction of such an individual that he is forever debarred from the joys and pleasures of married life, an

outcast from society, hated and despised, and reviled and persecuted by the world. Nothing but the most perfect resignation, and a well-founded confidence in the mercy and justice of the Creator, can render the lot of such a being at all supportable.

The subject of doubtful sex is one which has always, in all ages, and in all civilized countries, excited the warmest attention of the physiologist, the philosopher, and the medical jurist. Under the vague and ill-chosen name of hermaphroditism, invented at an early period of the world, was described every imaginable form of malformation of the genital and urinary organs, most dissimilar in character; and, consequently, were calculated to mystify and mislead the public mind. A class of beings was imagined, combining, it was said, the qualities of the male and female in the same individual, and capable of performing, within itself, the generative functions. The idea that such a union might exist, had its origin, no doubt, in fable. The reader of mythology need not be reminded here of the story of Hermaphroditus and the nymph Salmacis; how the former so ungallantly resisted the charms and entreaties of the latter, and how, finally, through the interposition of the gods, their bodies were united into one. The ignorance of medical men, the conceit and folly of legislators, and the mercenary conduct of many of the subjects of this variety of congenital malformation, served afterwards, in no small degree, to perpetuate the error thus engendered, and to transmit it, in nearly all its ancient force, down to a comparatively recent period. Modern researches had done much to dissipate these absurdities, when the publication, in 1836, of the great work of Mons. Isidore St. Hilaire, entitled *Histoire des Anomalies de l'Organization*, set the long agitated question forever at rest, by demonstrating, in the most undeniable and conclusive manner, that there is no such thing as hermaphroditism, in the vulgar acceptance of the term; or, in other and more philosophical language, that the union of perfect male and female organs in one and the same individual, is an anatomical and physiological impossibility.

Much prejudice, leading often to the most cruel persecution, existed against this class of individuals among some of the nations of antiquity. The Athenians had a law, providing that all hermaphroditic children should be consigned to the flame; while the Romans ordained that they should be boxed up, and thrown into the sea. In more recent times, all individuals of this description were excluded from holy orders, and from the office of judges, "because they were ranked with infamous persons, to whom the gates of dignity should not be opened."* Much of this prejudice has, fortunately, disappeared, under the benign influences of Christianity and civilization; but much still remains, and must continue in operation, as long as the human mind retains its present organization. If hermaphrodites are no longer burnt and drowned, stoned and persecuted, and mocked and reviled, they are uni-

* Beck's Medical Jurisprudence, vol. i. p. 106, fifth ed. 1835.

versally regarded with a degree of prejudice, amounting generally to positive aversion; and as unfit for any offices of dignity, divine, legal, or political. If such be the fact, and no one can doubt it, every suggestion, calculated to ameliorate the condition of this unfortunate class of beings, by depriving them of their only incentives to matrimony, and thereby dooming them to everlasting celibacy, should be hailed as a valuable contribution to the science and humanity of the present age.

[We have willingly given place to the above communication, not only because it is a very interesting and curious one, but also from the respect we entertain for the opinions of its distinguished author; but in doing so we may be allowed to say that we cannot feel satisfied with the soundness of his argument in the present instance, and that while we will leave the discussion of the subject to those more competent to the task, we may add, that it appears to us the administration of prussic acid to terminate the sufferings of those afflicted with malignant disease, or who have received severe and irremediable injuries, might be justified by the same train of reasoning.—EDITOR.]

ART. XV.—*Case of Ischuria Renalis.* By JAS. McGRATH, M.D.,
of Pittsburg, Pennsylvania.

IN the autumn of last year the following case occurred in my practice, which I have thought not unworthy of notice:—

ON the evening of Tuesday, September 9, I was requested to visit Mrs. G——th, a married lady, about twenty-three years of age. I found her sitting up in bed, her head supported by a female friend, her face was of a pale livid or sallow colour and seemed œdematous, her eyes were suffused, her lips colourless, her whole countenance was expressive of severe suffering and great anxiety, her pulse so feeble as to be barely perceptible. I was told she had fainted several times and had something like convulsions; that she was unable to lie down from the feeling of weight about her heart, which seemed to suffocate her. I administered some aromatic spirits of ammonia in water to her, as she disliked wine, it causing nausea. Having resumed my inquiries, I ascertained that when growing up she was subject to occasional fits, that her mother suffered from frequent epileptic attacks, that she herself was now in an advanced state of pregnancy (she thought about eight months so), that some three months since she felt ill and had herself bled, which relieved her then. She pressed me to take blood from her now, as she was satisfied it would again relieve her as before; this, however, I was unwilling to do until I had fully satisfied myself of the nature of her illness, and of its propriety. On examining the chest, loud mucous râles only were audible. The heart's action was rapid, with feeble impulse; the sensibility of the skin was so morbidly increased as to render an examination almost impossible, the slightest touch causing severe pain. I was informed that she had several loose discharges from the bowels during the day, but had passed no water from the

previous Sunday, though her desire to do so was urgent; that she takes some drink, but for several days past no food would rest on the stomach. There is nausea and occasional retching; she complains much of the unpleasant bitter taste in her mouth, of the sensation of weight and dull pain in her head, and the general soreness of her flesh. I now introduced a catheter to relieve the bladder, but, to my surprise, it contained not a drop of urine. I now became conscious of my patient's danger; here was total suppression of two days' standing, and, in her present advanced period of gestation, with a tendency to convulsive fits, or epilepsy, the present distressing symptoms were but the precursors of others more alarming if not timely relieved. She told me that, for a long time past, she has remarked frequently the very small quantity of water she had passed, and the severe pain it sometimes gave her, to relieve which she has tried various remedies, such as sitting over the vapour of hot water, drinking infusions of various herbs recommended to her by female acquaintances; latterly, however, her stomach will not bear them, nor anything, except tea or water. To increase her misery, if possible, she is tormented with an intolerable itching of the pudenda, followed or rather accompanied with burning heat and soreness. This I found to depend on a vesicular eruption, within and around the vagina and labia. Though the entire surface of the body is tender and painful to the touch, yet over the right kidney and along the ureter of that side the pain on pressure seems particularly acute. I felt somewhat satisfied that the cause of the suppression was most probably confined to the right kidney, and that the left was affected through sympathy. Conceiving the paralytic state was caused by congestion of the Malpighian bodies, I determined to comply with her wishes in abstracting blood. I took twelve ounces from the arm with considerable relief to the precordial oppression, and had a sinapism applied over the loins, with flannel cloths wrung out of hot water applied to the vulva, and ordered the following medicines: R.—*Pil. hydrarg.* ʒss; *Calomel* gr. vi; *Ext. hyosciami* gr. xij. *M. Ft. pilul.* xij.—i. 3 dis horis cum cochleare amplum misturæ sequeatis. *Infus. digitalis* ʒviijss; *Sp'ts etheris nitros* ʒss. Mix.

At my morning visit, I found the stomach very irritable; she had slept a little but was evidently delirious, inquiring after things and speaking of persons in a manner altogether different from her usual one; she, however, replied to my questions connectedly; her bowels had been troublesome, but no urine had passed; the nausea and vomiting were particularly distressing; she thought the pain in her head not so severe since the bleeding. I now had mustard applied to the epigastrium, and cupping-glasses over the loins, the medicines to be continued with tea or barley-water for drink, sparingly. At my evening visit, found diarrhœa had set in; the stomach was not so irritable, but the head symptoms were more marked; she appeared less sensible to her state, and fast verging towards coma. I was compelled to discontinue the pills owing to the diarrhœa; as I feared to give any preparation of opium in combination with them, I ordered a sinapism to the nape of the neck, and the following mixture: R.—*Mist. camphoræ* ʒviijss; *Acet. kali* ʒss; *Tinct. scillæ* ʒij; *Tinct. digitalis* ʒj; *M. Ft. cochl. magn.* 2 dis horis, with the infusion of green tea for drink. I was anxious to try the warm bath, but her advanced state of pregnancy forbade its use. We continued, however, the hot fomentations over the pubis. After a night of great and increasing restlessness, with delirium lapsing into stupor, from which she was carefully kept roused, I had the satisfaction to find, at my morning visit, that about an ounce of high-coloured urine had been voided with considerable pain. In the course of the day the secretion became re-established, and as the urine be-

came abundant all the more urgent symptoms began to disappear, leaving my patient in a state of extreme debility, from which she slowly rallied up to the 26th, when I was again summoned in haste. I found her sitting on a chair, her face slightly flushed; she complained of pain in her back, shooting round the abdomen; no uneasiness from her water beyond the frequent desire to pass it, the bowels natural. While speaking with her a paroxysm of pain occurred, which plainly indicated that the first stage of labour had commenced, though she assured me she had not got beyond the seventh or eighth month; on examination, I found the os uteri dilated sufficiently to allow me to ascertain the position of the child, which being natural, and this a first labour, I left for some hours, having first quieted all her apprehensions and fears. On my return, I found she was rapidly approaching the second stage, and, after a stay of some two hours, she was delivered of a female infant, which, from its small size and imperfect state, could not have arrived beyond the seventh month; the infant, however, with its mother, I am happy to say, continued to do well.

This case, to the majority of your readers, may present nothing remarkable, yet to me it did afford more than passing interest, inasmuch as we, I must say, fortunately seldom meet with so prolonged a case of complete suppression. I am aware of cases being recorded where recovery has taken place after a period of seven days' duration, yet taking into account the unfavourable circumstances under which my patient was placed, I think the case not wholly uninteresting.

PITTSBURG, February 12, 1852.

ART. XVI.—*On the Anemia of Pregnant Females.* By GEO. MARTIN, M.D., of Delaware County, Penn. (Read before the Delaware County Medical Society.)

EVERY obstetrical writer mentions plethora connected with pregnancy as the source of some of those diseases, which, when they occur, so often compromise the safety of both mother and child.

Much has been said about it, and so little about anemia, that it has been and is yet considered by some practitioners as the almost constant complication of pregnancy. The bare announcement of a poor woman being pregnant, has been to them clear evidence that she was plethoric, and a sufficient warrant for the use of the lancet; and to so great an extent has this been carried, that many females, even at the present day, think that they cannot be delivered of a healthy child, and themselves do well, if they have not been bled once or twice before the pains of parturition come on. Moreover, the physician who has been called upon to perform the operation, if he should chance to think differently, and have the hardihood to stand by his opinion, will find, in the event of a misfortune occurring either to the mother or child, that the

blame will rest upon his shoulders; and there will be persons, and those not a few, who will not hesitate to tell him that the result would have been otherwise if he had not refused to bleed.

Now this is certainly wrong; for though no one will deny that plethora does exist in some instances, yet it does so much more rarely than anemia; and I shall here endeavour to show that most of these cases in which bleeding is resorted to, arise from an impoverished blood, and that the use of tonics and even of the chalybeates would be followed by the happiest results.

Are the nausea, vomiting, and depraved appetite that are so common, and occupy so large a portion of gestation, symptoms to lead to suspicion of danger from an over supply of nutriment? On the contrary, if such derangements of the digestive apparatus were met with at any other time, would we not immediately try to relieve them, for fear that debility, emaciation, and even death might ensue? All medical experience points to such a course; and why should not the result be the same in one case as well as the other. There surely is nothing mysterious hanging over the pregnant female that will reverse all our known laws of the animal economy.

It has been said that the stoppage of the menstrual secretion counteracts these influences, and produces the supposed plethora; but this can hardly be, for the amount of nutriment drawn from the blood in forming a highly organized living being weighing from seven to eight pounds, with two to three more of appendages, must far exceed the amount required for nine catamenial periods.

The symptoms calling for depletion, as they are commonly described, are headache, vertigo, flushes of heat, depression of spirits, a full, frequent pulse, a feeling of fulness and pain in the pelvic region, and a tendency to hemorrhages in various parts of the body. Now it will be easy to show that many of these are often produced by anemia; and though bleeding may relieve some of them for a time, they will be sure speedily to return, as the remedy only aggravated that condition of the circulating fluid in which they originated; and to this may be attributed that necessity of a frequent resort to the lancet which many practitioners will tell us they have found. Anemia also has a strong tendency to derange the circulation; for when the blood is in this condition, it does not carry with it that stimulus which is necessary to excite the capillaries to do their part, and congestion will frequently ensue.

The nervous excitability, too, is greatly increased by this condition of the system, and this is the common cause of simple neuralgia, which it may produce in two ways: first, by its not being stimulating enough to the nervous centres to maintain a healthy action in them; and secondly, by its not affording the different organs a proper amount of good plasma to keep them in a healthy condition, and they demand through the nervous system a better supply. This also is the reason of that frequent, easily excitable, and sometimes full pulse which is so often met with in pregnancy and anemia; for the heart here, in endeavouring to answer the demands made upon it, acts much

more rapidly than it does in health, and as these wants are augmented in proportion to the amount of labour that is to be performed, we shall find that the least exertion will be followed by a great increase in the number of pulsations. During gestation, this excitability is manifested to a great degree, though in this case it is not to be attributed solely to the impoverished blood, for the nervous disturbances created by the changes wrought in the womb after conception tend considerably to increase it.

If we investigate the manner in which the above symptoms are produced, we shall find when they may be considered as evidences of plethora and when not. To begin, we will take the pain in the head, which, when not sympathetic with some other disorder, often arises from neuralgia, sometimes from congestion at others from irritation, and occasionally from inflammation. Now, I have before stated that anemia is the common cause of neuralgia, and I have shown that it strongly predisposes to congestion, which will be liable to take place whenever there is any excitement or irritation of the brain; and this may occur in any condition of the system. Yet, the result will be very different in the two cases; for when plethora exists, we shall have inflammation immediately following the congestion; whereas, in anemia, it may exist for some time without it. And this is very true in pregnancy; for here we sometimes have it lasting for weeks; producing much suffering, and at times followed by the most disastrous results, without our being able in many cases to discover a symptom of inflammation during life, or a trace of it after death; and when it does occur, it will generally be found to have arisen from some direct injury which the overloaded vessels have inflicted upon the tissue of the organ. Vertigo generally arises from it, as does also the disposition to hemorrhages, when they do not occur from the vitiated blood relaxing the vessels, and thereby obtaining a free exit; and the sense of pain and fulness in the pelvic region must be attributed to the same cause affecting the womb.

The flushes of heat and other nervous symptoms not unfrequently met with proceed from the excitability before treated of as arising from a deficient plasma; and as this must necessarily have a great influence over the moral functions, too, it will account for that depression of spirits so common in gestation.

From the foregoing facts, it will require no force to arrive at the conclusion that the symptoms of anemia greatly preponderate in the above; and to them I shall add a few others which will serve to place the subject in a still clearer light. Thus, the face often appears somewhat bloated and discoloured, the blood, when drawn, frequently presents the buffy coat without there being the least evidence of inflammation existing at the time; the carotids throb, and at times even a partial loss of vision ensues. Now, these are all known as symptoms of anemia; and the latter has been frequently produced by an extensive hemorrhage. In an analysis of the blood by Andral and Gavarret (for the account of which I am indebted to Caseaux's work on Midwifery), 32

cases out of 34 were found in which the globules were below the healthy mean, in 6 of which they ranged from 120 to 125, and in 26 from 95 to 120; they also found for the first six months the fibrine in the 34 cases was uniformly below the natural quantity, varying from 1.9 to 2.9; while during the last three months it exceeded it, ranging from 2.9 to 4.8, and averaging nearly 4; this, therefore, gives the true reason for the buffy coat; and we here have 32 cases out of 34 in which anemia was proved to exist.

The treatment of this affection should, of course, consist of tonics, the best of which are the ferruginous preparations, a nutritious diet, fresh air, and moderate exercise; the nervous symptoms, when excessive, should be allayed by the antispasmodics and opiates; and when congestion occurs, it will generally be speedily relieved by cold applications to the part, counter-irritants and rest, with a little aperient medicine if the bowels should be constipated; and perhaps it may not be out of place to mention here that, when the brain is the seat of engorgement, the best mode of applying the cold to it will be by pouring water of a low temperature in a steady stream upon the head, care being taken to watch the patient, that she be not too much prostrated thereby. It would be easy to cite numerous instances in which the above treatment has relieved headache, vertigo, and even convulsions, in some of which after depletion had been fairly tried and failed; but I trust enough has been said to show the real character of the complaint, and with a few words upon the injuries that a false diagnosis may inflict upon the child, I shall bring this subject to a close.

It is an acknowledged fact that tubercles and scrofula often originate in a depraved condition of the system, and as the vital organs of the fœtus at the time of their formation are undoubtedly in their most delicate condition, and very susceptible of change, may not the imperfect plasma, which is all the parent can furnish out of her impoverished blood, lay the foundation for these diseases, which only wait for some exciting cause to call them into action? And if this be the case, how highly important it is, both to the mother and her offspring, that the true nature of the affection be clearly understood, and the proper remedies at once applied.

ART. XVII.—*On Neuralgia of the Scalp.* By J. BROOKS, M.D., of Pittsburg, Pennsylvania.

THERE is a class of diseases that may be fairly ranked among the *opprobria medicorum*, if intense suffering on the part of the patient, with very little relief from our art can fairly entitle any disease to that "bad eminence." I allude to that anomalous form of disease called neuralgia of the scalp. It may show itself in pain so intense and persistent as to imbitter the whole life of the patient, or it may exist only in its frequent phase of dizziness.

The last term, however, is quite too mild to express the sad annoyance it causes the patient. The sensation of constantly falling is hard to endure, and in many cases it totally incapacitates the sufferer from pursuing his occupation, even if it does not expose him to the absolute risk of life. In the absence of any satisfactory treatment to be found in the books, I have been forced to look around for some remedy; and, so far as seven or eight cases can establish confidence in a means of cure, I have no hesitation of announcing one. Be this as it may, I now encounter these most vexatious cases with totally different feelings from those which formerly I approached them, as I have yet to find a case where the remedy has failed. In July last, I submitted to it in my own person, which I may be allowed to adduce as a proof of my sincerity if not of my intelligence. Being fully persuaded, therefore, of the value of the remedy, and anxious that others may derive the same benefit from it, I submit the following cases for the consideration of the profession. I give them only for what they are worth. I have no disposition to mistake or exaggerate, and if in other hands the practice proves as successful as it has in mine, I shall be abundantly grateful.

Not to weary your readers with the length of my exordium, I shall narrate, as concisely as possible, the first four cases in which I have tried it, wishing others may be equally fortunate :—

CASE I.—On July 1, 1846, I was called to visit a young lady who was labouring under slight pneumonia, which readily yielded to bloodletting. I found, however, that for two years she had suffered extremely from neuralgic pains of the posterior region of the head, extending to the vertex, abdominal muscles, and pelvic viscera. There was tenderness of the cervical, dorsal, and lumbar vertebrae. In defecation, she endured the most intense pain, which very naturally she referred to piles. The disease not yielding to the usual remedies, I divided the sphincter ani, with the effect of completely relieving so much of her suffering. What remained now was intense pain of the whole scalp. I ran through every general and local treatment that occurred to me, till it would be easier to tell what I did not rather than what I did. Nothing, however, was of the slightest avail but laudanum, which procured her temporary relief in five-drachm doses. Wearied out with the worthlessness of all my remedies I was strongly tempted to abandon the case to nature; but it occurred to me that dividing the branches of the occipitalis major might probably afford relief. In February, 1847, I made incisions on both sides, about two inches long and down to the bone. Immediately and entirely my patient's sufferings were relieved. The wounds were filled with lint till supuration became established, and caustic potash was occasionally and cautiously applied for six weeks to keep it up. The issues were then suffered to heal. From this time I had no difficulty.

Three caustic issues were established over the course of the spine and kept open for four months. The patient gained flesh and strength till her health became perfectly re-established.

CASE II.—A puddler in an iron works of this city had suffered for years from pains in the back of his head, occasionally so severe as to incapacitate him from work. Every known remedy had been tried with only very partial relief.

Even when comparatively well, and at his work, he was obliged to wear a woollen cap, as the slightest draught of cold air brought back his old sufferings. In September, 1847, he consulted me, ready to submit to any treatment that promised relief. As in this case only one side was affected, I made an incision about two inches in length and down to the bone. The wound was treated with caustic from time to time for three weeks, and then suffered to close. The cure was complete.

CASE III.—A gentleman, of sedentary habits, had suffered from neuralgia of the head and back for fifteen years, which had so much impaired his general health that he became unable to attend to any business. In August, 1848, I laid open the scalp, down to the bone, two and a half inches in length. He himself applied caustic to the wound from time to time, so as to keep up suppuration for two months.

Three issues were established over the spine, which discharged for three months. He informed me, about six months since, that he enjoyed excellent health.

CASE IV.—A glassblower, thirty years of age, consulted me in August, 1848, on account of dizziness, which had troubled him for a year or more. He stated that it occasionally disabled him from attending to his work, as he was in danger of falling off the bench, on which glassblowers walk when at work. I frankly told him that I could not *cure* him without dividing the nerves of his head, but that other means would afford temporary relief. Forced, if possible, to go on with his work, he chose the latter; resolving at some future period, if he did not get better, to submit to the operation.

Concentrated aqua ammonia was applied to the back of his head and neck, and morphine given, which so relieved him that he was able to pursue his business through the season of blowing, which continues about ten months. He went to the country, remained two months, and returned in September, and commenced work. In a very short time, however, he was obliged to give it up, the dizziness becoming worse than ever. An incision was made over the posterior and upper portion of the right parietal bone, Oct. 10, 1849, which relieved the dizziness immediately. The wound was filled with lint, a bandage applied, and the next day he did a full day's work. He improved in flesh and continued well till May, 1850, when again he was seized with dizziness. On the 5th inst. the other side was operated on, the wound treated as before stated; and, up to this time, he has had no return of the disease.

PITTSBURG, May, 1851.

ART. XVIII.—*Treatment of Acute Rheumatism with Lemon-Juice.*

By ROBERT H. CUMMINS, M. D., of Wheeling, Virginia.

It is now about two years since Dr. Owen Reese, of Guy's Hospital, first experimented with lemon-juice in acute rheumatism. Since that time it has been extensively used by many of our English brethren, and the success that has attended its use has established it perhaps as the *best* remedy in that disease.

Our experience with lemon-juice is limited; but, under its influence, we believe the excited action of the heart and arteries subsides; the articular pains abate; the urine attains its healthy colour, quantity, and chemical pro-

perties; the temperature resumes its natural standard, and all the symptoms of the disease are replaced by the conditions of health more speedily and effectually than under the use of any other remedy we have ever seen employed.

As illustrative of this, we subjoin the three following cases. They are selected from a number of others, because the disease, from its complication, in each assumed a different aspect. The first case was one of simple uncomplicated rheumatism; the second was complicated with endocarditis; and the third with pericarditis.

CASE I.—Mr. B. F., aged forty, of nervo-lymphatic temperament, sent for me March 1, 1852. He had complained of pain and stiffness of his limbs for three days previously, and he referred his sickness to exposure on the ice. I found him labouring under all the symptoms of acute rheumatism in an aggravated degree. His tongue was heavily coated with a yellow fur; pulse 100, strong and full; urine scanty, high coloured, and depositing a copious lateritious sediment—tested by litmus paper, it gave a strong acid reaction; skin dry and hot; articular pains very severe, affecting the wrists, fingers, ankles, and knees. In addition, the whole muscular system was stiffened, and gave rise to pain when he attempted to move. From my former experience with this disease, I anticipated in this case a protracted and painful spell of sickness. The hospital reports, detailed in the *London Lancet*, abounded in favourable notices of Dr. Rees' plan of treatment in rheumatism by lemon-juice. And inasmuch as I felt dissatisfied with the remedies ordinarily employed, I resolved in this case to give it a trial. The treatment was commenced by a cathartic of rhubarb and calomel. By evening this had operated three or four times freely. At bedtime, I ordered twelve grains Dover's powder and frictions with brandy and salt to the affected parts.

2d. Patient passed a painful and sleepless night; this morning is no better; symptoms same as yesterday; directed lemon-juice, two tablespoonfuls in a little sweetened water every three hours. Evening, no material change.

3d. Mr. F. passed a better night; slept two or three hours; this morning has less pain, and can move a little in bed. Swelling and redness of the articulations somewhat abated; pulse 90, strong; skin moist; tongue beginning to clean; urine more abundant, less highly coloured, depositing less sediment. Continue lemon-juice and frictions. Evening, symptoms all improving. Continue remedies.

4th. Patient slept pretty well; says he feels much better; skin perspiring; tongue cleaning; pain and swelling of the articulations subsiding; pulse 80; urine nearly healthy in quantity and appearance; tested by litmus, the acid reaction seems natural. Continue lemon-juice and friction as before. Evening, Mr. F. says he is still better; complains loudly of the lemon-juice; says the taste is becoming almost intolerable. Continue it notwithstanding.

5th. I find Mr. F. with a cool and moist skin; complaining but little of pain, and able to move himself in bed; tongue nearly clean; pulse 70, soft and regular; urine natural in colour and quantity, depositing no sediment; redness and swelling of joints nearly gone; appetite returning; no movement of the bowels since first; ordered rhubarb and magnesia. Continue lemon-juice every four hours. Evening, purgative operated three times; patient has been sitting up; says he is well. The pains have subsided, and stiffness only remains in the affected parts. Discontinue all medicine during the night.

6th. Mr. F. saluted me this morning with an inquiry as to what he might eat; says he feels well; slept well; complains only of stiffness and weakness;

pulse, skin, tongue, and urine natural; appetite good; ordered animal broth for diet; lemon-juice every six hours.

7th. Patient walks about the room; no motion in the bowels since the 5th; order rhubarb and magnesia; lemon-juice three or four times a day; oysters, with coffee and milk-toast, for diet.

8th. Patient improving.

9th. Mr. F. convalescent; and to-day walked to his business house; dismissed him cured.

Remarks.—The cause producing the rheumatism in Mr. F., the mode of its accession, and the symptoms existing when I was first called to see him, all indicated a severe attack of that malady. I confess I expected to have a tedious spell of sickness, and a troublesome patient to treat. The disease was not complicated during its progress by any heart affection. It will be observed, that I used few remedies, and none of those having any direct curative effect in rheumatism but the lemon-juice. This I employed in large and frequent doses, and I acknowledge I was astonished at the rapid amendment following its use. The subsidence of the pulse, the alteration in the sensible and chemical properties of the urine, and the abatement of the articular pains and swelling, were all striking and speedy. On the sixth day of the treatment, and five after the commencement of the lemon-juice, Mr. F. was entirely relieved. In similar cases, I have heretofore seen employed by others, and have used myself, the lancet, tartar emetic, mercury, opium, nitrate of potash, colchicum, and magnesia, all separately and conjoined, but none of them have convalesced short of three weeks, and most of them have been ill six weeks. During this period, the disease and the medication together have reduced the patients to an extreme degree, and they have been a long time recovering flesh and strength. Mr. F. lost but little of either, and speedily regained both.

CASE II.—Mrs. H., aged twenty-six years, is a married lady, and the mother of three children. Her temperament is mixed sanguine nervous and bilious. She has suffered from childhood with spinal disease, and now labours under a lateral curvature of that organ. She has frequently suffered during the last eight years with neuralgic pains of the breast, sides, and extremities. Her assimilative organs have been deranged for a number of years past, and her tongue presents a uniformly red appearance, with elevated papillæ. Her appetite is never good, and she has tenderness on pressure over the epigastric region and bowels. These symptoms have all resisted a persevering and varied course of treatment.

She was attacked with acute rheumatism on the 8th of April, 1851, and sent for me on the 9th. I found her labouring under the usual symptoms of that disease; her pulse 120, hard and quick; her skin moist and perspiring; her ankles and knees were considerably swollen and painful; her tongue was covered with a white fur and projecting red papillæ; her bowels were constipated, and her urine high coloured, small in quantity, and having a strong acid reaction. She complained excessively of the pain, and was unable to move the affected members. Ordered nine cups to the spine. Calcined magnesia \mathfrak{z} ss, and wine of colchicum seeds twenty-five drops; administer immediately, and repeat every four hours till free operations are induced from the bowels; friction of brandy and salt to the affected parts; morphia half a grain at bedtime.

10th. Mrs. H. was somewhat relieved by the anodyne, and slept a little during the night. The purgative operated freely, but the rheumatism is no better; the right hand and wrist are affected. She complains much of the pains, and is unable to make the slightest movement; pulse 120; skin moist; urine high coloured, strongly acid, and depositing a lateritious sediment; tongue white, with raised papillæ. R. Vin. colchic. sem. gtt. xxv; magnes. carbon. grs. xii; tinct. opii gtt. viii; for one dose, and repeat every four hours. Evening, no change; continue medicine, with the addition of an anodyne at bedtime.

11th. Patient no better; pains shifting their position, as is customary in rheumatism; tongue, skin, pulse, and urine same as yesterday. No operation on the bowels for two days; continue medicine, omitting the laudanum. By evening, the bowels were moved freely; continue colchicum mixture, with laudanum; anodyne at bedtime.

12th. Mrs. H. passed a restless night, and this morning is no better. The plan of treatment by colchicum, magnesia, and opium seems insufficient; the disease has not even abated; pulse still 120, and hard; skin has become dry and hot; urine high-coloured, small in quantity, and acid; tongue not altered. Patient complains of pain in the præcordial region; has a slight cough, and tenderness upon pressure in the intercostal spaces over the heart; there is dulness on percussion over the same region, and upon applying the stethoscope there is perceived a distinct endocardial murmur. Diagnosis, rheumatic endocarditis. Six cups in præcordial region. R. Hydrarg. chlor. mit. ℥j; pulv. Dover ʒj; M. in pulv. viii. div.; one to be given every four hours; lemon-juice, one ounce every three hours, in a little sweetened water. Evening, pain in the chest relieved; articular pains unaltered; dulness on percussion and endocardial murmur still persist; repeat cupping; continue powders and lemon-juice.

13th. Patient slept some during the night, and this morning the skin is moist; pulse 112, not hard; tongue covered with a yellowish fur; papillæ raised and red; urine high-coloured, small in quantity, and strongly acid; no operation on bowels since 11th; præcordial pain, dulness on percussion, and endocardial murmur have all subsided; articular pains not relieved; patient has taken seven powders; no pyalism; order them to be discontinued; direct calcined magnesia, ʒss every four hours, till bowels are moved; lemon-juice as before.

It is a question undecided and admitting of discussion, whether rheumatic pericarditis, or endocarditis, can be relieved alone by the remedies suited to rheumatic inflammation in the other tissues. The importance to life of the organ involved, in the former case, has usually impelled practitioners to make use of every means to subdue the disease when it attacks these parts. Depletion, counter-irritation, and mercury are all ordinarily employed in conjunction with anti-rheumatic remedies, so that it is impossible to tell whether the cure is really attributable to one set, to the other, or to both conjointly. True, it has been stated that rheumatism of the heart may be cured by colchicum, and an isolated case here and there has been referred to in proof; but I must confess that I would not be willing to trust my patient's life and my own reputation to the trial. The symptoms of endocarditis in Mrs. H. subsided speedily, and we are disposed to give a part of the credit at least to the lemon-juice.

Evening: bowels moved freely; tongue cleaning; skin moist; no symptoms of heart disease; articular pains less severe; pulse 112; urine more abundant and paler, reaction strongly acid. Lemon-juice, an ounce every three hours.

14th. Patient slept well during the night, and this morning is much better. She can move in the bed without pain; articular pains and swelling nearly

gone; tongue clean; pulse 96, and soft; urine clear; skin moist. Continue lemon-juice.

15th. Mrs. H improving; lemon-juice every four hours.

18th. Convalescent; sits up, and complains only of stiffness in the joints; appetite and strength improving. Lemonade *ad libitum*.

20th. Patient well.

Remarks.—We commenced the treatment of this case by local depletion. We were induced to employ cupping to the spine, on account of the old standing affection of this part. This was followed by a purgative draught, consisting of magnesia and wine of colchicum. At bedtime, after the bowels had been moved, we administered an anodyne of morphia. For two consecutive days thereafter, 10th and 11th, we continued to employ magnesia, colchicum, and opium, without any benefit to our patient. She grew worse during their use. On the morning of the 12th, our case was complicated with an endocarditis, and at this period a change in the treatment was instituted. Cupping over the præcordia, calomel, opium, and lemon-juice were the remedies employed. The endocarditis speedily yielded, and at the expiration of thirty-six hours the symptoms of this disease had disappeared. The mercury and opium were then discontinued, and from this time the cure was intrusted to lemon-juice alone, with an occasional purgative of magnesia. Our patient rapidly recovered, and in five days was convalescent. Other remedies besides lemon-juice, it is true, were employed, and probably the endocardial disease was relieved mainly by the cupping, calomel, and opium; but we cannot remove the impression from our minds that the general rheumatic affection was cured by lemon-juice, and that too after a fair trial had been given to colchicum and magnesia, with depletion, calomel, and opium.

Our next case of rheumatism was complicated with pericarditis. We will abbreviate it by giving a detail simply of its salient points.

CASE III.—Miss C. sent for me, Sept. 20th, 1851. She is an unmarried lady, about 21 years of age, of sanguine and nervous temperament, and having light hair and blue eyes. I learned that she had been complaining for some days previously of erratic pains in different parts of her body, and stiffness of the joints. I found her labouring under all the symptoms of acute rheumatism. She had swollen and painful joints; a moist but hot skin; a furred tongue, and a pulse beating 110 in a minute. She had constipated bowels, and the pain was so severe as to fix her almost immovably on the bed. The heart, at this visit, gave no symptoms, either rational or physical, of disease. We ordered a purgative of magnesia and colchicum, and directed an ounce of lemon-juice every three hours. At our next visit, the succeeding day, we found the patient still suffering severely from her disease. The purgative had operated well, the pains had shifted their position and affected other joints, but they were not ameliorated in the slightest degree. The pulse beat 120, and the skin and tongue presented the same conditions as before. Upon inquiry, we ascertained the existence of pain in the præcordial region, and on examination we found the usual attrition sounds of pericarditis, with dulness on percussion. We bled our patient eighteen ounces, and gave her calomel and opium at intervals of four hours. In the evening we cupped her over the heart, and the next day blistered her in the same region. The calomel and

opium were continued until the succeeding day, when ptyalism supervened, and they were withheld. During the whole period, the lemon-juice was made use of. The third day after the accession of the pericarditis, the symptoms of this disease had subsided, and the treatment specially directed for its cure was omitted. The rheumatic affection still existed in the joints, but less severely than before. The urine, during the whole period, was high-coloured, strongly acid, and deposited a lateritious sediment. The subsequent cure of the case was intrusted entirely to lemon-juice, and there was a rapid and progressive amendment, in all the symptoms, from this time onward. In four more days, and eight from the commencement of treatment, our patient was able to sit up, and on the eleventh day we considered her convalescent, and ceased to attend.

Remarks.—How long would this patient have been sick under the usual course of treatment? Perhaps the experience of nearly every physician would lead him to answer, about six weeks. It was cured, notwithstanding a severe and dangerous complication, in eleven days; and lemon-juice, if it was not the principal remedy, certainly exerted an important influence toward the production of that end.

It may not be a *propter hoc*, but simply a coincidence; but the truth is, that the cases of acute rheumatism in which I have employed lemon-juice have recovered in a wonderfully short space of time, and the administration of the medicine, and the recoveries, have followed each other in the usual order of cause and effect.

If the preceding detail will have the effect of calling the attention of our countrymen to lemon-juice in acute rheumatism, and lead them to try it, our object will have been accomplished. I judge the remedy has been but little used by American physicians. We think it is by far the best medicine that has ever been recommended in that disease, and Dr. Reese, for his discovery and the promulgation of it, is deserving of the highest esteem of the profession, and the lasting gratitude of his race.

We have recently tried citric acid in a case of acute rheumatism, in the proportion of nine drachms to the pint of water. Of this we gave an ounce every three hours. It did not appear to exert the same happy influence that the lemon-juice did in other cases. The patient, however, recovered in about thirteen days. Further experience will enable us to determine whether citric acid is equally efficacious with lemon-juice in this disease; and if it is found so, economy and convenience will both recommend it in preference.

WHEELING, VIRGINIA, May, 1852.

[Dr. WILLIAM PEPPER has tried the lemon-juice in a number of cases of rheumatism admitted under his care in the Pennsylvania Hospital, and on the 1st of July, 1851, he read an interesting communication on the subject to the Philadelphia College of Physicians, in which he gives the results of his experience, with the details of *fourteen* cases in which he employed that remedy. Upon the whole, the general result in Dr. Pepper's cases was favourable to the use of lemon-juice. We refer the reader for the details to Dr. Pepper's very interesting paper in the *Quarterly Summary of the Transactions of the Philadelphia College of Physicians*, Vol. I., N. S., No. 3.—EDITOR.]

REVIEWS.

ART. XIX.—*Transactions of the Medical Society of the State of Pennsylvania, at its Annual Session, held in Philadelphia, May, 1852*: Vol. II. Published by the Society: Svo. pp. 146.

THE Medical Society of the State of Pennsylvania has evinced, certainly, a commendable spirit of industry. Though but recently organized, and, as yet, comprising but a small portion, comparatively speaking, of the physicians of our State—the majority of the counties being unrepresented in its councils, and lending no aid in the furtherance of the great work in which the Society is engaged—it has, nevertheless, succeeded in directing the attention of our medical men not only to a more diligent cultivation of the several fields of inquiry within their reach, but to the importance of communicating the results of their labour in a form calculated to augment the general stock of professional knowledge.

The physicians of Pennsylvania have much reason to be satisfied with the two volumes of *Transactions* that have been issued by the State Society. The reports of which they are composed are not, it is true, replete with profound inquiries tending to the elucidation of either of the mooted questions in the etiology, the pathology, or the therapeutic management of disease; they are, more generally, a simple record of detached observations, made by men constantly engaged in the active duties of their profession, often under circumstances and in situations that leave less time for prolonged and elaborate investigations, and for the presentation of their results in a shape adapted for the press, than those who practice the profession in the midst of the dense population of a large city are generally aware. Many of the observations recorded in these reports may, perhaps, be considered trivial and commonplace; still, as additional evidence of the correctness of generally received pathological or practical views, derived from the experience of different observers in dissimilar locations, they have an important influence in giving permanency and increased force to medical truths that are, most generally, of everyday applicability.

The volume of *Transactions* for 1852 contains reports from eleven counties. Two leading subjects appear to have occupied the attention of the majority of the medical societies from which these reports emanate. The first of these is a geological survey of the several counties; and the second, the solution of the question, whether particular diseases or classes of diseases have any positive connection with distinct geological formations.

Three of the County Medical Societies have furnished very beautiful and accurate maps of their respective counties, to illustrate the general description of their geological features as given in the reports. Most of the other reports contain partial geological descriptions of the counties of the disease of which they treat, that will, we have reason to believe, be rendered more complete, and illustrated by maps hereafter.

In respect to the second subject, the relationship between certain diseases and particular geological formations, the materials as yet collected are not sufficiently extensive to lead to any positive results. The question is still to be

determined by a series of similar observations, made in the different sections of the State where the same geological features are met with, and extending through a number of years. Much credit, however, is due to the County Medical Societies of our State for having commenced the inquiry, and we would urge them to prosecute it faithfully until some satisfactory conclusion shall be attained. Enough has been already done to show the importance of studying the geology of a district in our investigation of the etiology of its endemic diseases. As was correctly observed in the report of the Berks County Society, presented last year:—

“In the present state of science, every topographical description must be deemed imperfect that has not geology for its foundation, and topography is manifestly a necessary element in the history of disease.”

The disease, which appears to have been most extensively studied in reference to the geological formation of the different districts in which it occurred, is dysentery. Some of the statements in reference to its greater prevalence in gravel, slate, and alluvial formations, and its rare occurrence in limestone regions, are merely negative; while others would appear to indicate that, under particular local and meteorological conditions, it is as liable to occur upon one geological formation as another.

In the report from Delaware County, it is stated that—

“After a careful examination and comparison of facts, the committee are impelled to the belief that the diseases of this county during the year have not been in any manner influenced by geological formation, except that intermittent and remittent fevers have been confined to the marsh lands on the Delaware River.”

We are to recollect that Delaware County has but very little limestone. The rocks are mostly mica slate, gneiss, and sienite, though there are also considerable quantities of granite, quartz, felspar, mica, and serpentine. A considerable portion of the county is covered with drift, from a few inches to several feet in thickness, composed chiefly of silicious sand and pebbles. Along the Delaware River, there is a deposit of alluvium, varying in breadth from half a mile to a mile; a considerable portion of it is marsh, which is generally well banked and drained.

The committee, in the report from this county, remark that

“*Dysentery* has been much more common in all parts of the county than for many years before, and in some places has been quite malignant and unmanageable.”

In the report from Lebanon County, it is stated that

“The diseases prevalent in this county present no marked peculiarity, nor has the nature of the soil, to a great extent, any influence in the production or propagation of disease. In the gravel district, *dysentery* prevails more frequently than in other parts of the county, either endemically or epidemically, and often in the most malignant form. Whether the distinctive geological features of this section may furnish the cause of the frequent occurrence of this malady, is a question which has not yet been solved. The surface of a large portion of the district, the slopes and tops of the ridges, being composed of shaly and slaty materials, is not raised to an elevation exceeding that of our limestone valley. The shales are of a ferruginous composition, interspersed with specks of sulphuret of iron, and contain other mineral salts to a much greater extent than occur in the limestone regions. The water of the wells and springs, in the summer and autumnal months, when the supply of it is much less than at other seasons of the year, is probably more charged with mineral salts than when the flow of water through the interstices of the slates is greater in a given time, and to this may be attributed the exciting cause of this complaint. If such be the

case, it has been suggested that filtering the water through finely-pulverized limestone would answer as a preventive of this flux."

In the report from Mifflin County, we find the following statement:—

"The assertion, in the Berks County report of last year, that *dysentery* never prevails epidemically upon the limestone, is not borne out by our experience here. Many of the cases occurred upon the lime rock, and amongst those who used the hard water issuing from it."

Logan's valley, Blair County, has principally a limestone soil; the soil of the hills, as well as of the Alleghany Mountain, rising abruptly from among them, on the east side of the valley, is chiefly slate and red sand. Throughout this valley, *epidemic dysentery*, we are informed by Dr. Confer, extended with great violence during the latter part of the summer of 1851, only disappearing on the approach of cold weather. "It occurred," he adds, "after a dry and warm season. All the ponds and stagnant pools were dried up, and the streams were generally low."

Dr. Rodrigue, of Hollidaysburg, Blair County, states that, in his vicinity, he has "witnessed *dysentery* both in its epidemic and sporadic visits: twice as a well-marked epidemic, in 1832 and 1842, and, if the number of cases that it fell to his lot to prescribe for in 1851 be considered, when added to those of our neighbours, as sufficient to constitute an epidemic, then he has seen it three times."

The localities in which it prevailed he describes as "the Alleghany Mountain, secondary formation, Hollidaysburg, transition limestone; most extensively in the former."

Dr. C. W. Parrish, of Marshalton, Chester County, remarks: "The *dysentery* has frequently been prevalent (since 1828) as an epidemic, but was generally confined to the elevations, and principally to the tale-slate range, though cases occasionally occurred in the regions previously occupied by fevers."

The remarks which follow in immediate connection with the above statement are particularly interesting.

"In July, 1850," says Dr. Parrish, "a considerable flood occurred, which caused the Brandywine to overflow its banks and to submerge the meadows, at a time when they were either mowed, with the hay remaining on them, or having a very heavy growth of grass ready for the scythe. The mass of vegetable matter passed with unusual rapidity into a state of decomposition, and the effluvium became extremely offensive. From one meadow on the east branch, the stench was carried, by the prevailing currents of wind, a considerable distance up a hollow to the house of one of our most substantial farmers, where, in the month of August, the dysentery attacked, in succession, nine members of the family, leaving only three unscathed; and also made its appearance in several other families living near the meadow, while other houses, not within the range of the prevailing winds, escaped its visitation. About six miles above this place, the flood brought down, and lodged in fence corners, and high against the trunk of trees, very many tons of recently mown grass, and of hay nearly ready for the barn. Late in the fall, that locality was visited by remittent fever of a rather typhoid character, from which the patients recovered very slowly, but which was confined to three or four families living on the banks of the stream."

"During the summer of 1851, dysentery appeared in the neighbourhood last referred to; and in a distance of about a mile along the creek, I believe hardly a family escaped its ravages; and the proportion of deaths was very great."—"I have perhaps 'travelled out of the record,' in alluding so minutely to the diseases of 1850; but I was led to do so in order to call attention to the fact that, in that year, the same local causes, in one vicinity, produced dysentery,

in another fever; and that, in the succeeding year, the locality previously visited by dysentery remained healthy, while the ground occupied by fever in the preceding year was the seat of a most violent dysentery."

Dr. Thomas, of West Chester, Chester County, says that he thinks he has "more frequently met with dysentery, as an epidemic, on the slate ridge north of the borough than elsewhere, though it has so occurred, occasionally, on the low ground." Subsequently, he states that "he saw, last summer (1851), a few cases of dysentery, probably twenty-five or thirty, the peculiarity of which appeared to him to be that they prevailed more upon the low than upon the high grounds. During the period that he has practised his profession, he has generally met the disease more on the high grounds; but most of the severe cases of the past season were on the low, and near streams of water."

Dr. P. A. Ogier, who resides in the great Limestone Valley, in the Township of East Whiteland, makes the following report:—

"The most serious epidemic of the year (1851) was *dysentery*, which prevailed so extensively over a large portion of this and the adjoining counties."—"Early in July, the disease appeared on the Slate Ridge, to the south of the Limestone Valley, and was confined to this region for some weeks, attacking a number of families living adjacent. In the month of August, it became more general, and I had cases in almost every quarter of my practice."

Further on, he says:—

"I could discover no local cause of the disease. Indeed, it appeared in almost every variety of situation: on the summit of the Slate Hills, in the rolling country to the south and east, as well as in the Limestone Valley."

Dr. W. D. Hartman, a resident practitioner of the borough of West Chester, writes as follows:—

"Of *dysentery*, twenty-four cases (all white) occurred in my practice. The cases varied from a mild attack, requiring but three or four days for its cure, to the most severe form of the disease. About half my cases occurred during August, and were confined to the mica slate ridge. The weather was very hot and dry, with cool nights; the difference of temperature between the mornings and evenings and the middle of the day, in the localities affected by the disease, as shown by the thermometer, varied from 25° to 30°."

Dr. J. P. Edge, of Downingtown, Chester County, remarks as follows:—

"Dysentery first made its appearance in this vicinity on the 1st of June. It continued until late in October. So widespread was it, and so general through some families, that the conclusion that there was some common cause was irresistible. My attention was directed to the detection of any appreciable one; but the disease was seen in such variety of locations as to baffle any definite conclusion. The weather was warm and dry to an unusual extent throughout the summer and early fall, affecting sensibly the springs and wells of the neighbourhood. I noticed, as in former seasons, that most of the locations visited were immediately sheltered by a hill (though not so invariably in southern exposures as in former seasons), with a spring-head or streamlet near the door, *i. e.*, places where there was a high temperature, with great radiation and evaporation from the surface, and which were but little influenced by the winds from the north and west. Of forty-eight cases noted, five only occurred where limestone water was used by the family, although full one-half of the whole number resided on the limestone formation, or on its edge. Those five occupied situations where the sun's rays exerted great influence, and where there was a want of cleanliness and comfortable lodging. On this subject there has always prevailed a sentiment in this place, which can be traced back to the experience of Drs. Todd, Kersey, and Fairlamb, that the limestone water of our valley had a prophylactic effect against dysentery."

Dr. Edge remarks that, out of the first fifteen cases, twelve were in persons who used water that had been conveyed through leaden pipes, and he attributes the aggravated character of some of these cases to this circumstance.

Dr. S. H. Harry, of Doe Run, Chester County, states his impression to be that congestive fever prevailed in the limestone districts and in the valleys; whereas, *dysentery* prevailed mostly on the hills; and he has never known it to prevail as an epidemic in limestone districts.

Dr. Griffith, of Springton, Chester County, after enumerating pneumonia typhoides, *dysentery*, bilious, remitting, and intermittent fevers, smallpox, varioloid, measles, whooping-cough, scarlatina, chicken-pox, parotitis, catarrh, or influenza, erysipelas, and rheumatism, as the diseases which have prevailed in his district of country within the last forty years, adds:—

“I have not noticed that any of these diseases have been more liable to occur in one geological formation than another; but intermittent and remittent fevers are more apt to prevail in low situations and near swamps and stagnant waters.”

Subsequently, he remarks:—

“Limestone does not abound in this region of country, and I have no experience of the preventive qualities of limestone water in *dysentery*; but I will state a fact in relation to that disease. There are some six or seven families, and part of the time there have been as many as twelve or fourteen families residing in the buildings which are situated immediately on the bank on the west side of the dam at Springton Forge. I have attended the greater part of all the cases of disease which have occurred at that place for forty years, and, although *dysentery* has prevailed at various times, at nearly every house in the vicinity of that place, I cannot recollect of ever attending, or hearing of a serious case of *dysentery* in any one of these families.”

In the report from Bucks County, we are informed that—

“An obstinate and, in some instances, fatal *dysentery* occurred in many situations, during the hot and excessively dry summer and autumn of 1838; in our practice, it was almost exclusively confined to an elevated sandy ridge, extending from the Neshamony Creek to the River Delaware, upon which Doylestown is situated, and which bounds the Buckingham and Solesbury limestone valley on the north-west. We have no recollection of any case originating in the limestone valley immediately adjacent. This remark, however, conflicts with the observations of our medical brethren of Montgomery, in connection with the *dysentery* that prevailed in the limestone valley of Plymouth and Whitemarsh, in the year 1849. The discrepancy we will not attempt to reconcile.”

Dr. Beaver, in the report from Berks County, describes epidemic *dysentery* as having prevailed pretty extensively in his neighbourhood. The cases which came under his own observation were of a mild character, and for the most part yielded readily to an ordinary simple treatment. The whole number of cases was seventy, of which five proved fatal. “The geological formations on which my cases occurred,” he remarks, “were generally the limestone, and some seven or eight on the gravel, near the junction of the two. My past experience,” he adds, “brings me to the conclusion that *dysentery* generally prevails in a more unmanageable form on the gravel and slate formations than it does on the limestone.”

In the same report, Dr. Bertolet, speaking of the occurrence of epidemic *dysentery* in Oley, says:—

“The first case of *dysentery* in my practice occurred on the 26th of July. The patient was my next neighbour. The disease immediately spread in every direction; although southwardly, where we have an entirely different geological

formation, it did not extend beyond half a mile."—"The season was unusually dry, the country being, in many places, almost parched."—"The disease did not abate until the cold weather set in, and indeed was somewhat aggravated by the first light frosts."—"The districts where dysentery was most common were either of the slate or gravel formations, or slate underlaid with limestone. Some few sporadic cases were found in the limestone region, but these could almost invariably be traced to exposure on gravel. I noticed that persons using the water of springs having a southern aspect were more liable to attacks of the disease than those who obtained it from an opposite locality. Every family residing on the southern inclination of the Monocacy Hill, so named from the creek which has its source in it, using the waters of the sparkling springs which in a great degree irrigate the soil, were, with one exception, seized by the disease, and even this one did not entirely escape, as it had it in a mild form, which I attributed to the fact that he drank water drawn from a deep well. On the contrary, the people living on the northern side were not attacked at all. Families, in general, using water from deep wells, or springs having a northerly exposure, were taken less early or severely. To these causes I attributed the immunity of my own family. My well is deep, well sheltered, and on the northern side of the house.

"These facts, as well as the prevalence of the epidemic during and after an unusual drought, prove that solar heat exercises a powerful influence, both in predisposing the system and developing malaria in the production of dysentery.

"It is not a little curious that those who had the disease two years previously, when it prevailed to some extent, escaped last season. Typhoid fever existed simultaneously with dysentery, but in no case was a patient attacked by both at the same time. In persons who had both in succession, sometimes one, sometimes the other preceded."

In the report from Huntingdon County, we find the following remarks:—

"As to the influence which different formations of soil may exercise upon disease, or, in other words, whether, for example, the slate formation will increase the progress and severity, or protract the removal of diarrhoeas and dysenteries more than the limestone formation, is a matter difficult to decide in this mountainous country. In the fall of 1849, *dysentery* prevailed with much violence in a limestone district in the north-eastern part of the county, while the neighbouring slate formation district, with a few exceptions, remained free from that disease. Again, it is an everyday occurrence to hear persons who are accustomed to the use of limestone water complain of pain in the bowels and diarrhoea, after having taken a few drinks of slate water away from home. It would appear that atmospheric influences are the most obvious causes of disease in this county. Hence we consider the sudden transitions from warm to cold, and from cold to warm, and the malarious miasma which exists endemically through the whole valley of the Juniata, the main causes of the most of our maladies."

We have thus brought together all the statements contained in the reports comprised in the volume before us, having a direct bearing upon the question of the geological relationship of dysentery—the only disease in regard to which such relationship has attracted special attention. It must be evident that the observations upon which these statements are founded are too limited in extent, and in many instances have been too loosely made, to enable us to arrive at anything like a satisfactory conclusion. They are, however, in more respects than one, interesting, and, by directing the attention of the physicians of our State to the accurate investigation and careful record of all the circumstances, local or general, telluric or meteorological, domestic or social, under which the epidemic and endemic diseases that prevail in the different sections of it occur from year to year, they must necessarily lead to important results. So far as the question of the relationship of disease to particular geological formations is concerned, if the plan suggested for the appointment of commit-

tees charged with the investigation of the diseases prevailing throughout the several geological divisions of the State, be adopted, by the subsequent comparison of all the facts obtained by these several committees, some positive results may be anticipated.

In one or two of the reports, reference is made to the occurrence of erysipelas as an epidemic, and its connection with puerperal fever is either directly or indirectly noticed:—

“Erysipelas,” we are told, “in the latter part of March, 1852, made its appearance in Palmyra, Lebanon County, and its vicinity, as an epidemic, and proved fatal in many instances. Few lying-in women escaped its attack, and the ratio of mortality (in these), we have been informed, was quite large. It has thus far confined itself to this section, included within the red sandstone and silurian limestone.”

Dr. Rodrigue, of Hollidaysburg, Blair County, states that—

“Erysipelas has prevailed to a considerable extent this last year (1851); it generally assumed an inflammatory character. The antiphlogistic course was pursued, and the only external applications have been either a bread and water poultice (properly made) or a solution of acetate of lead for the first forty-eight hours; then the inflamed parts and sound skin were painted twice or thrice a day with tincture of iodine. Should we unfortunately handle our patients much, we always refuse obstetrical calls, as in two instances a puerperal fever in our opinion was the result. Matter from an erysipelas patient will communicate disease; we have reason to believe that we took the disease in this way ourselves, and we have seen others similarly infected.”

In the report from Montgomery County, the following statement occurs:—

“Erysipelas prevailed in February and March in the upper portions of Montgomery, in the neighbourhood of Berks and Bucks counties. In Kulpville, it assumed a malignant character, and was spread by means of the attendants upon those already affected. Erysipelas prevailed also in Harleysville, along the pike, and in the neighbourhood of Tylersport; also, about the line of Lexington. This disease seemed first to attack the throat, and afterwards the surface of the body. In females, it was especially liable to attack the peritoneum, and one or other of the serous tissues in the male. When the peritoneum became affected, there was much hiccough from the disease extending to the diaphragm. In some cases, symptoms of arachnitis, followed by coma, presented themselves. The disease in many cases proved fatal. The treatment consisted in the administration of tonics, calomel, nitrate of silver, and the usual remedial agents.

“Many cases of puerperal fever occurred during the prevalence of erysipelas, and, so far as the committee (by whom the report was drawn up) have been able to gather from the reports they have received, these cases of puerperal fever were confined chiefly to the same localities as the former disease. Many of the cases terminated fatally.”

We find repeated reference made in the reports contained in the present volume of *Transactions* to the diminished prevalence, generally speaking, of periodic fevers; to the increased frequency of typhoid fever throughout a large portion of the State; to the less sthenic character of diseases generally, and their tendency to assume at an early period a low form, precluding active depletion, and requiring an early resort to tonics and stimulants.

The following facts, presented in the report from Mifflin County, in reference to the somewhat regular cycles in which what are termed paludal fevers have prevailed in the valley of the Juniata, are particularly interesting. They are not very easily explained by the popular doctrine of a specific miasma:—

“Lewistown, the seat of justice for Mifflin County, stands upon the line-

stone rock No. 6, and the axis, including portions of 7 and 8, is well developed on the ridge north-west of the town.

"This flourishing borough, with its 3000 inhabitants, is beautifully situated at the confluence of the Kishacoquillis Creek with the Juniata, about one mile north of the grand entrance to the narrows, from which the river pursues its winding way through the defiles of the Blacklog and Shade mountains to the adjoining county of Juniata. Since the commencement of the public improvements, Lewistown has risen rapidly to wealth and importance, and enjoys from its favourable position for trade and manufactures advantages surpassed by few inland towns in our State.

"A remittent fever of a congestive character, which prevailed as an epidemic in 1823, and was particularly rife amongst the labourers on the turnpike, and afterwards in 1828, and for several successive seasons—during the construction of the Pennsylvania Canal—gave to this place and vicinity a character for unhealthiness which, all things considered, it did not perhaps deserve. The mortality attending this epidemic was more the result of previous habits of intemperance and a total disregard of all dietetic regimen than any unusual malignity in the nature of the disease. Three-fourths of the cases were confined either to strangers unaccustomed to the atmosphere of the river, or to emigrant Irish but lately landed upon our shores."

"In 1850, and the six or seven seasons previous, a fever of a bilious remitting type prevailed in the north-eastern part of Lewistown, being the extremity most remote from the river. At the close of the season, for several years, as the weather became colder, the fever assumed the true typhoid type, and a number sunk under it with hemorrhage from the bowels. It was evidently kept up through the winter months by contagion, and is another proof of the conversion of malarial remittent, through the interrention of secondary causes, into the enteric or typhoid type.

"The fever was traced to a pond of putrescent water, connected with a brick-yard, immediately in the rear of the infected district, from which it took the name of the frog-pond fever. In 1850, when the fever was at its height, the pond was filled up, and the disease extinguished.

"From all that has preceded it is evident, then, that to the river we are principally to ascribe a class of diseases from which the other valleys are comparatively exempt. And it appears, from the earliest medical records of our county, that the recurrence of fever upon the Juniata has been marked by periods of great regularity, having a cycle of about twenty years. The first authentic account we have of its prevalence was about the year 1782-3, but of which no particular details have been left to us. It again prevailed to a great extent in the years 1801, '2, '3, and '4. From this time it nearly disappeared until the years 1823-4, when it again visited our waters, having prevailed several seasons previously on the lower parts of the Juniata and on the Susquehannah beyond.

"From this period remittents and intermittents appeared annually, to a more or less extent, on some parts of the stream, until 1851, when they left us altogether, and have not yet reappeared. Our physicians, however, agree that in 1842, and for several successive seasons, there was an unusual accession to the number of cases, so that we have had three regular cycles of twenty years, with a fourth not so distinctly marked, yet showing a tendency to conform to the usual periodic time. At the cycles of 1803 and 1823, and very probably that of 1783, the epidemic did not prevail at the same seasons upon the different sections of the Juniata, but in two instances, at least, we know that it commenced on the waters of the Chesapeake, with an upward progress along the shores of the Susquehannah and its tributaries, not reaching until the third or fourth season its ultimate boundaries upon the extreme branches of pure cold water, where the disease died out as it were for lack of the pabulum which kept it alive.

"In 1804, it reached no further than the southern limits of Huntingdon County. At every succeeding period, its upward boundary was much extended—a fact of easy explanation when we take into view the rapid progress of improvement upon our streams, the clearing out of the lands, giving access

to the sun, and a higher temperature to the waters; but above all to the noxious exhalations arising from the stagnant ponds connected with the mills, forges, and furnaces everywhere scattered over the streams. Another remarkable feature attending our febrile diseases of late years is their tendency to visceral congestion, and a gradual change of diathesis, from the acute inflammatory, which prevailed forty years ago, to the asthenic or typhoid type, which they have been imperceptibly assuming for many years past; so that the active depletion, the full vomiting by tartrate of antimony, and the large doses of drastic purgatives, which were once prescribed with the best results, are now much more rarely and cautiously resorted to. Prostration of the powers of life is more readily induced than formerly, and the system sooner requires the support of tonics and stimulants, with a more generous regimen."

We had marked several passages in the reports contained in the present volume of the *Transactions* of our State Society, to lay before our readers, as presenting highly interesting observations in reference to the typhoid fever which appears to have prevailed during the past year in the interior of the State to some considerable extent; but we have already exceeded the limits within which we had hoped to confine this notice of the volume before us. For this reason, we must also omit the summary we had prepared of the experience of physicians in different sections of the State in reference to the most effective treatment of dysentery, a disease which has been of late unusually prevalent in many of the counties.

We extract the following observations on the treatment of scarlatina from the report of the Medical Society of Berks County, as deserving of attention. The free use of diluted hydrochloric acid we have ourselves prescribed in that disease, and from our as yet limited experience of its effects, we feel persuaded that it is a remedy deserving of a more extended trial. With Dr. Heister, however, we are far from believing that it will prove a specific, "to be relied on to the exclusion of other rational means when indicated."

As regards the city of Reading, Dr. J. P. Heister remarks in regard to scarlet fever as follows:—

"In my practice, it was almost exclusively confined to children, and the most prominent prodromic symptom was vomiting. After the eruption was out, and the disease well formed, the most marked symptom was delirium, which lasted four or five days, or, I should rather say nights; for, most commonly, the patient was quite rational and tranquil during the day, but very delirious at night. I find, by reference to my record, that I have treated seventy-two cases through their whole course, out of which three proved fatal. I saw three other fatal cases, all in the sequelous stage. One of these died from hemorrhage of the bowels, one from swelled glands before suppuration was established, and one (seen in consultation a few hours before his demise) from anasarca. Of the seventy-two cases treated from the first setting in of the disease, seven became anasarcous, and none had suppuration of the glands. None of the anasarcous cases died. I saw three or four other cases of anasarca in consultation, all of which recovered except the one above referred to.

"The whole seventy-two cases were treated by laxatives when required, which was usually at the commencement; and the unrestrained use of hydrochloric acid, diluted with water and sweetened; excepting one case in which bronchitic symptoms were prominent, and antimonials were used. From fifteen to twenty drops of the acid were directed to be put in a half pint of water, at the temperature of the chamber, well sweetened with white sugar, and allowed *ad libitum*. It was commonly very grateful to the patient, and taken with decided pleasure. No other general treatment was resorted to from first to last. From a good deal of previous experience in the treatment of this fatal disease, I was seriously impressed with the evil of the *nimia diligentia medicinae*, and at first resorted to the use of hydrochloric acid rather as an abatement of this evil than from any confidence in its virtues. Sceptical as I am, however, in medicine, I

am, from my late experience, forced to attribute very considerable efficacy to it in the treatment of scarlatina. I by no means, however, consider it a specific to be relied on to the exclusion of other rational means when indicated. I think its salutary effect upon the local inflammation of the throat, when the acid is put in use at an early stage of the disease, not among the least of its benefits. It appears to me, I had fewer anginous cases to contend with than some of my brethren who did not use the acid; I certainly had fewer than I have before had in the same number of cases treated in the same period of time. I deemed it necessary to bleed in a single case, and that proved fatal, not because bleeding was inappropriate, as it for a while controlled the violence of the symptoms, but because the case was complicated with severe convulsions.

"Externally, to the throat, I used counter-irritants, preceded by leeching, where the local symptoms threatened to be violent. I found oil of turpentine and olive oil, mixed in equal parts, or in the proportion of two-thirds of olive oil with one of turpentine, applied every three or four hours, and the evaporation prevented by the application of a strip of flannel, a convenient means of attaining my object. The sloughy ulcers of the throat, when met with, which was seldom, I treated satisfactorily by the application of nitrate of silver in solution, in the proportion of two scruples to the ounce of water, applied once a day. I found that this application can be much more effectually made by means of a nicely trimmed piece of sponge, securely attached to the end of a whalebone handle, than by a camel's-hair brush. I even prefer a swab, made by rolling a narrow strip of muslin on the end of a stick, to a brush. A very important indication in young children is to keep the nostrils pervious, in order that the due aeration of the blood in the lungs may not be prevented. This is done very effectually by throwing freely into those passages, by means of a small sponge, warm sage tea, slightly acidulated with vinegar, and sweetened. Young children, too, as well as older ones, who have become exhausted by the disease, require the tough mucus, which obstructs the larynx, to be removed from time to time. This, also, is best done by a sponge, and the tea prepared as above described. Cool or tepid sponging of the surface was resorted to, with its usual tranquillizing effect. My cases of anasarca were treated principally with jalap and cream of tartar."

Dr. McDonough, in the same report, speaking of an epidemic of scarlatina which occurred at Bernville, and its vicinity, says that almost every form of the disease, from the mildest to the most malignant, was observed.

"In one family, in particular, every member, consisting of seven children, were attacked; the two oldest of whom, a boy of eighteen years of age, and a girl of sixteen, were peculiarly affected. This was in the latter part of October and the commencement of November (1851). The inflammation of the throat imparted its virulence to the bronchi, and an alarming condition of the respiratory organs soon became apparent. At this stage I was called in. The voice I found reduced to a low whisper. The tonsils and parts adjacent by no means tumefied, but ragged, and here and there ulcerated, and emitting a very fetid smell. On examining with the stethoscope, I ought to compare the thorax to a kettle with something boiling in it. The poor children could not lie down, lest suffocation should ensue. The cough was severe and dry. I at once gave them myrrh, strongly acidulated with acid. muriatic., mixed with sage tea as a gurgel, and inwardly, syrup. scill. comp., and strong vinegar, ʒā 1 oz., to which was added half an ounce of acetated tincture of opium: dose, a spoonful morning and night. On the second visit, on the third day, I found my patients much improved. The expectoration was free and copious, the digestion much better, and they had slept soundly through the night, though in a semi-erect posture. I subsequently added a solution of sulph. quiniæ, and when, from personal sickness, I was obliged to discontinue my visits, their appetite was wonderfully increased."

The chairman of the committee by whom the report, from which the above is taken, was drawn up (Dr. Stewart, of Reading), remarks, in respect to the treatment of scarlet fever, that

"Regarding it as one of the family of diseases for which there is no ascertained specific, all he has aimed at has been to take care of the throat and attend to other local symptoms as they presented themselves, and to keep the system in proper order. With this view, in ordinary cases, he has for the last four years prescribed nothing beyond castor-oil to keep the bowels open, and ordered once or twice a day, during its continuance, a sinapism to the throat; and he can truthfully say that within that period he has not had a single case which ended in sore-throat. Even in cases in which this was threatened, the mustard at once prevented it."

Dr. Beaver, of Reading, in the same report, remarks as follows:—

"Dysentery had scarcely subsided when scarlatina followed. This was more general in its attacks than the former. It was mostly of the mild or simple variety, and in no case (excepting two) of the malignant form. Like dysentery, it seemed to commence in town, and afterwards spread to the surrounding country. Up to January last (1852), I treated some forty-eight cases, a great majority of which were in town; six of the above proved fatal; three of these deaths took place in adults, and the rest in children under thirteen years of age. My treatment was plain and simple, and pretty uniform; it chiefly consisted in the exhibition of a mild emetic or cathartic in the outset, as the case indicated, followed by the very free use of the hydrochloric acid given in water, *ad libitum*; always making it a point to give considerable, that the system might be affected or influenced by it. Externally, I never omitted an application to the throat, on flannel, of equal parts of powdered cubeb and black pepper, mixed with lard; a portion of which being applied was removed and then repeated every four or six hours. Not only in this disease, but wherever an inflammation of the throat and neighbouring parts exists, have I applied this external application, and know of no other that has so often produced relief and benefit to the patient."

In the same report, Dr. Wanner, of Kutztown, informs us that, besides the usual diseases of the several seasons, his neighbourhood was visited during the past year, 1851, with an epidemic of scarlatina.

"Most of the cases were of the anginose form. The treatment instituted in the twenty-four first cases consisted principally in an emetic and purge at the onset, and diaphoretics afterwards, in greasing with *speck* (the fat of bacon) the whole surface of the body; of this number I lost two. In forty cases following, the same plan of treatment was pursued, but in place of the milder diaphoretics, a prescription like the following was employed: R. Hydrochlor. ammoniæ ʒij; magnesie sulph. ʒv; ant. et pot. tart. gr. j; syrup. acid. citrici ʒss; aquæ ʒiv. M. Of this solution, I gave to a child three or four years old, one teaspoonful every three hours. Of this latter number of cases I lost none. I would add, that the volatile liniment has in all the cases been used externally to the throat."

Annexed to the report from Berks County is a communication from Dr. William Gries, of Reading, on what he terms the "catarrho-nervous fever." Although differing somewhat from the views laid down by the writer in relation to the pathology of the disease of which he treats—without the time, however, to discuss at present the question—we, nevertheless, consider the paper, inasmuch as it presents the practical observations of a highly intelligent and clear-sighted physician, an interesting one. We most heartily coincide in the sentiments so forcibly expressed by Dr. Gries, in the conclusion of his essay on the defects in our present system of medical education.

The report on variola and vaccination is a highly important one; we should desire to see it brought to the notice of every practitioner—of every person, indeed, in our State; and hope that the editors of our medical journals will find sufficient space to publish it, or at least that portion of it which comprises a synopsis of the evidence relied upon by the committee for the esta-

blishment of the value and certainty of vaccination as a preventive of small-pox.

We have not yet alluded to the very sensible and manly address of Dr. Charles Innes, of Northampton County, delivered as President of the Society, at the opening of its session of 1852. This has not arisen from any disrespect to its author, nor from the want of a due appreciation of the merits of the address itself, but from our having occupied as much space as can be conveniently appropriated for a notice of these *Transactions*, in our desire—but imperfectly carried out, it is true—to present to the medical community at large some idea of the fruits of the organization of the profession in Pennsylvania, so far as that organization has been effected; in the hope that our brethren in those portions of the State where, as yet, no such organization exists, may be induced, by associated efforts, to aid in the praiseworthy effort already made to increase the general stock of medical knowledge, by rendering more perfect our acquaintance with the true nature of the endemic and epidemic diseases that prevail in the different sections of the State, and, at the same time, more certain and uniform, the means adopted for their prevention, mitigation, or removal. We have, consequently, confined our very imperfect analysis exclusively to such portions of the volume as comprise observations more immediately bearing upon the etiology, the pathology, or the therapeutics of disease.

D. F. C.

ART. XX.—*Sketches of Brazil; including New Views on Tropical and European Fever; with Remarks on a Premature Decay of the System incident to Europeans on their Return from Hot Climates.* By ROBERT DUNDAS, M. D., Physician to the Northern Hospital, Liverpool; formerly Acting Surgeon to H. M. 6th Regiment; and for twenty-three years Medical Superintendent of the British Hospital, Bahia. London, 1852: 12mo. pp. 449.

THE author of these sketches is evidently a close observer and independent thinker. Many of the medical opinions advanced by him are in opposition to those currently received by the profession, and sanctioned by some of the greatest names in ancient and modern medicine; they profess, however, to have been the result of a close study of diseases—their causes and character—in different climates and localities; and, as he has presented the chief evidence on which his opinions are based, he affords his readers an opportunity of testing their truth.

The observations contained in the present publication were originally delivered in a series of lectures at the Liverpool Northern Hospital in the beginning of the present year; those lectures are here published without any material alteration.

In the introductory remarks, Dr. Dundas attacks the commonly received opinion of the specific difference between the typhus, the typhoid, and the relapsing, or, as he would denominate it, the remitting fever.

“The greater number of the distinctions, he argues, in the symptoms attempted to be established between these fevers, are obviously either trivial or visionary—distinctions without a difference; and, however broadly they may be defined in the closet, I have never yet met with a physician who could con-

clusively verify them at the bedside of the patient, although I have witnessed these diseases in this country, in Ireland, and in different quarters of the continent.

"As regards the character of the eruption, so constantly insisted on, nothing, I believe, can be more fallacious; for I have myself more than once witnessed every variety of eruption, pretty distinctly marked, in the same patient, at one period or another of his disease, and practitioners who have seen much of tropical fevers must have observed the occasional appearance of all the eruptions commonly deemed pathognomonic of special forms of European fever. Dr. Wragg, in a paper published in the *Charleston Medical Journal and Review* for March, 1851, on an epidemic of 'Breakbone Fever' in Charleston, in the summer and autumn of 1850, describes the eruption attending the disease as 'not at all peculiar in its character, but varying almost infinitely.' It resembled, in various cases, scarlet fever, rubeola, impetigo, scarlet rash; in some cases the 'skin was intensely red, and raised in large and numerous welts;' 'in some cases it was erysipelatous; in others, petechial; in others, like common prickly heat; and, in a few, papular.' So vague, indeed, is the value of the eruptions as a diagnostic sign in fever, though so strongly insisted on by authors, that, even at the present hour, we are unable absolutely to diagnose certain forms of eruption from the ordinary appearance of flea bites.

"Moreover, we know that, independently of the English, many of the French, and the most distinguished German observers, whose claim to accuracy and talent few will contest, have not recognized these varieties of fever as distinct diseases. No practical physician, indeed, will admit that symptoms alone are sufficient to justify a distinct classification of fevers; and neither in the symptoms nor in the results of the so called typhus, typhoid, and relapsing fevers do we find a wider range than is constantly observed in other diseases, and is rationally accounted for by individual peculiarities, difference of season and climate, modes of living, and the sanitary condition of the population attacked, with various other moral and physical influences. In like manner, also, we can rationally explain the difference of mortality in different localities and circumstances.

"Dümmler, in his account of the Silesian epidemic of 1847, describes the fever as observing a rhythm at equal intervals like an ordinary ague, and the sequelæ were not very dissimilar. That it was identical with the Scotch epidemic of 1843 (and others observed at different periods in Ireland and Scotland), all admit; yet, this Silesian fever presented abundant crops of rubeculous and petechial eruptions, while the Scotch epidemic was characterized by their absence.

"Again, the prevalence of several distinct epidemics in the same locality and at the same epoch is not only contrary to general experience, but opposed to our knowledge, as far as it goes, of the laws by which epidemics are governed in all quarters of the world; nor does the term 'intercurrent' by any means satisfactorily meet the difficulty.

"As distinctive of typhus, Dr. W. Jenner, in his valuable work on fever, observes that he has never seen a relapse; a proposition, I apprehend, opposed to the general experience of the profession. He also prominently insists on the shorter duration of the fatal cases of typhus, unaccompanied by any definite anatomical signs, compared with the fatal cases of typhoid fever, in which local lesions are commonly detected, as a proof of the non-identity of the specific causes of the two fevers. Now, I apprehend that this fact admits of another and more satisfactory solution by reference to the intermittent and remittent fevers of hot climates, as well as numerous diseases of our own latitudes. In the more rapid and fatal form of these maladies, no well-defined local disorganization will be found after death; while, if the disease be prolonged, local lesions are always to be detected. In fact, Dr. Jenner himself states that, if typhus fever be prolonged beyond twenty-one days, local lesions sufficient to cause death (independently of the fever) are always present. Dr. W. Stokes, in his work on fever, a work unexcelled in any language, lays down what I believe to be the true law on this question, namely, 'that, in almost any instance of essential fever, local disease springs up at some period or other of its course;'

'and that a vast proportion of fever cases are carried off by these local affections.' He also refers to the question of time.

"I am not aware whether Dr. Wm. Stokes, or Dr. Graves, of Dublin, has visited hot climates; but the latter, in his valuable work on *Clinical Medicine*, observes that 'there is not so much difference between the diseases of Ireland and of warmer countries as has been imagined; they differ, it is true, as to their degree, but not as to their pathology.' Now, this is a remarkable statement; and supposing Dr. Graves had not himself visited tropical countries, strongly indicative of the genius of the man; for, of the absolute truth of the doctrine here so broadly laid down, there exists not the shadow of a doubt. Dr. Cormack justly remarks that, 'were this doctrine more generally appreciated, the accounts of the different fevers unfolded to us would, perhaps, present less picturesque and piquant, but certainly simpler and truer pictures of disease.' Most undoubtedly they would.

"The parallel, moreover, drawn by Dr. Graves between the Dublin and the tropical yellow fever admits of no dispute; the correspondence is complete. The same is true of the Edinburgh yellow fever, as observed by Dr. Cormack, although it differed from the Dublin fever in this, that one was of the continued, while the other was of the remittent type; there being, also, instances of intermission. But who that has examined the history of the cases can for an instant question the essential identity of these fevers?

"I cannot, indeed, resist the conviction that ere long the essential identity of fever in all countries will be generally admitted by the profession; and my chief regret is, that the present advocacy of the doctrine and the opportunities which I have enjoyed of verifying its absolute truth, had not fallen to the lot of some of the eminent men whom I have named, whose talents would have done justice to its importance, and whose well-established reputation would have at once secured that attention to which questions so interesting to science and of such high practical import are so pre-eminently entitled.

"I would finally appeal to the undoubted specific influence of quinine (when opportunely and adequately administered), in controlling the fevers of tropical climates, and to its equal efficacy in controlling the fevers of this country, as has been fully proved by the cases treated at the Liverpool Northern Hospital, the Liverpool Fever Hospital, St. Thomas's Hospital, London, and elsewhere. I would ask whether, irrespective of all other evidence, the specific power exercised by proper doses of quinine over all these several forms of fever does not afford conclusive proof that in their essential nature these fevers are identical, and differ only in form and degree?"

To such as feel an interest in the important question as to the identity or specific difference of the so-called specific fevers, as well as to the advocates of the reciprocal convertibility of the several forms or types of fever, the foregoing remarks of Dr. Dundas will not prove unacceptable. To judge, however, of their full force, the extracts which the author has given from Dr. Cormack's work on the *Epidemic Fever of Edinburgh*, and Dr. Dümmler's account of the *Epidemic Typhus of Silesia*, and his references to the statements of other modern writers on the subject of fever, should be consulted.

The first lecture treats of the causes of the speedy destruction of health in European residents on their return from tropical climates.

After referring to the rare occurrence of gout among the native Brazilians, as well as among the foreign residents, notwithstanding the habits and modes of living prevalent in the higher ranks of society, and to some extent among foreigners, are such as would seem to favour the development of the disease, Dr. Dundas proceeds to account for this exemption. He maintains that the excess of certain principles in the circulating and secreting fluids of the body, which constitutes the chief predisposing, as well as the immediate or exciting cause of gout, are, in the inhabitants of tropical climates, abundantly and unceasingly eliminated by the capillary vessels of the surface.

"We must remember," he remarks, "that the cutaneous system performs infinitely more important functions in the higher than in the lower latitudes; removing through the perspiratory secretion considerable quantities of animal matter, and especially very sensible amounts of the lactic and uric acids. To-phaceous deposits I have scarcely ever met with. It will thus be sufficiently apparent that the economy, under such circumstances, will be more efficiently relieved from those effete or deleterious principles which, carried into and retained in the general circulation, would constitute a real *materies morbi*, and which, by first impairing the organic nervous power, would induce disorder, or rather increase that already established in the secreting, excreting, and digestive systems. From the disturbance of the functions of these systems, plethora and increased vascular irritability would commonly result; and would give rise sooner or later, according to idiosyncrasy, constitution, and predisposition, to all the varied manifestations of tonic or anomalous gout.

"In all hot climates, the secretion from the external capillary system is incessant and profuse, while the secretion from the kidneys is in an equal ratio diminished, their functions being, in fact, vicariously and energetically performed by the skin. The urine is consequently scanty in quantity, and acrid in quality from a deficiency of its watery constituents; for example, often not more than a few ounces of high-coloured urine will be passed during the twenty-four hours, although *gallons* of liquid ingesta will have been taken during the same period."

Dr. Dundas has shown, from an analysis of *post-mortem* examinations of the kidneys of residents in Brazil, that, although these organs are but seldom the seat of actual disease, still they are very generally in a state of atrophy, from, as he supposes, a prolonged diminution of their function.

The condition of things above described is maintained commonly for a long series of years.

"Eventually, the individual returns to the colder latitudes of the north with his digestive powers seriously impaired, and his capillary system weakened by long-continued over-excitement. The accustomed profuse perspiration is suddenly arrested, and the renal system is as suddenly called on to resume its long dormant functions, but it is too late. The kidneys, from prolonged inaction, have suffered, if not organic disease, commonly an amount of functional change sufficient to interfere with the performance of their now all-important duties, and the most formidable consequences necessarily ensue. Gout, simple or complicated with rheumatism, appears in all its various forms, disposing to apoplexy, paralysis, disease of the genito-urinary system, functional and organic cardiac disease, or anomalous and distressing derangements of the digestive and assimilative functions, with their numberless train of diseased moral and physical sympathies."

The second lecture is devoted to a consideration of the treatment of the gouty attack by which the "break-up" of the constitution of Europeans who have returned home after a prolonged sojourn in tropical climates is ordinarily followed. The entire course of treatment, hygienic as well as therapeutic, recommended by Dr. Dundas, is judicious. We cannot spare space, however, to present even an outline of it.

The subject of the third lecture is the uncertainty of the received theories explanatory of the nature and cause of fever. The leading position of Dr. Dundas in regard to this important form of disease is thus expressed by him:—

"I am strongly convinced that much of the obscurity and uncertainty, and many of the contradictory doctrines espoused by different parties, are more to be ascribed to the imperfect views taken by the respective authors than to wilful perversion of facts or positive ignorance of the relations of various morbid actions with the series of changed functions which they involve, and of their direct or indirect connection with each other. There is a homogeneity (if the

expression be permitted) in the laws of disease, of which we are just now beginning to enjoy the first glimpses; and although it would be too much to allege that fever and inflammation are but one and the same morbid action greatly diversified, no doubt, through the influence of numerous concurrent circumstances, we nevertheless know that the theory of the day which rendered a special reason of the proximate cause of the *one* was deemed to be equally illustrative and explanatory of the other. The phenomena of fever, nevertheless, as specially distinguished from inflammation, are, I am disposed to believe, *essentially one and the same*; the simplest expression of that morbid action being delineated in the paroxysm of an ague—in the succession of its three stages, hot, cold, and sweating; and assuming under certain circumstances of climate, constitution, modes of living, &c. &c., the various forms of *typhus fever*, *plague*, *remittent fever*, *yellow fever*, and all the subordinate varieties of fever denominated *essential* by the French school."

In an examination of the doctrines of Lancisi as to the cause of paludal fevers, Dr. Dundas, by a reference to his work entitled, *De Noxiis Paludum Effluviis*, published in 1695, shows very conclusively that Lancisi is not, as is so commonly believed, the author of the modern exclusive doctrine of marsh miasm—that he nowhere teaches the idea of marsh poison being one and indivisible—of its being the exciting cause of intermittent fever by its poisonous action on the nervous or sanguiferous system—of its producing these effects in only one mode—and of its being limited to the sole generation of intermittent fever, specially and individually, as distinguished from continued fever.

We cannot follow our author in his long array of quotations from the work referred to—a work well worth the attentive perusal of all interested in the investigation of the etiology of what have been termed "miasmatic diseases."

"The authority of Lancisi," remarks Dr. D., "cannot be adduced in favour of the doctrine of a special poison; but his authority is invaluable as proving the distinct origin of every variety of fever from the agency of moisture, cold, and heat, and other atmospheric vicissitudes. In this respect, his observations become of the highest interest, and, in a great measure, corroborate the views which I have myself been led to adopt: first, as to the cause of these fevers; and second, as to the means of prevention and cure. His words on the effects produced by the effluvia are distinct and emphatic: 'Checking the perspiration by which the noxious and useless matters, either otherwise accumulate in the system, ought to be carried off from the body.' 'Unde fit, ut quæ nostris e corporibus perspirari debent vel noxia, vel saltum inutilia corpuscula, magnam partem prohibentur effluere.'"

The following is a brief summary of the leading views entertained by Lancisi on the subject of marsh poison and its effects:—

1. The poisonous emanations of marshes are not of a simple nature; but are always compound.

2. They are composed of inorganic and organic effluvia.

3. The inorganic portion can scarcely be held of itself to be a cause of disease.

4. The organic constituent—which, by the way, is almost wholly of an animal composition—conjointly with the preceding, occasions the fevers, &c.

5. These emanations are, consequently, of a very compound character, and vary very much in their physical and chemical constitution.

6. They are more especially influenced by the season of the year.

7. They produce a diversity of diseases: continued, remittent, and intermittent fevers, as well as other maladies, such as diarrhœa, &c.

8. The fevers are not always caused by marsh airs, or miasma; but they occasionally arise from a disturbed state of the elasticity of the atmosphere.

9. They are materially influenced by worms taken up by the animal body.

10. They occasionally originate where the atmosphere is in the state of highest purity.

"Lancisi never employs, throughout his work, the word '*venenum*,' or poison; and consequently he cannot be charged with the theory of marsh miasm being a specific poison. The diversity of effects, indeed, which he ascribes to its agency fully negative any such proposition. In fact, as I have already stated, Lancisi has been *quoted*, not *read*."

Lecture fourth, after a review of the prevailing doctrines of malarious fevers, enters upon a discussion of the question, Is periodicity a distinctive feature in certain diseases?

Dr. D. maintains that the law of periodicity, or the disposition to remission and exacerbations at certain intervals, is not confined to intermittent fever, but will be found to apply more or less distinctly to all human diseases—to those arising in the most opposite conditions of the animal economy, and determined by morbid agents apparently the most dissimilar and opposite in their nature as well as in their results. To illustrate this, Dr. D. runs a parallel between gout and ague, both diseases being marked by distinct paroxysms and remissions; and in both, the interval between the paroxysms being attended by certain feelings of *malaise*, irritability, depression of vital power, and derangement of the secretions.

On the question, Can the supposed Poison of Ague remain dormant in the System? Dr. D. remarks as follows:—

"It has been urged, in proof that a special poison acts on the system in ague, that individuals exposed only for a brief period to the influence of marsh miasmata have been seized with intermittent fever. Now, I have myself been repeatedly exposed, and have witnessed the temporary exposure of others, in robust health, and with unimpaired nervous energy, to the most concentrated emanations of marsh effluvia, in various quarters of the globe, and in *no single instance* have I ever observed such temporary exposure followed by ague. It is true that, had such persons been previously subjected to the influence of long-continued heat, cold, fatigue, intemperance, the depressing passions, &c., then, indeed, intermittent or remittent fever, rheumatism, or dysentery, or some other disease, might, and probably would, ensue, according to the constitution and predisposition of the individual. Such sudden attacks I have repeatedly witnessed to supervene on such temporary exposure in marshy localities; but I have invariably found, in these instances, that the constitutional powers of the individual had previously suffered from one or other of the depressing moral or physical agencies just alluded to. Nor, in this inquiry, must we lose sight of the fact, that a long interval may elapse between the application of the *supposed* malaria and the appearance of the intermittent, as I myself frequently witnessed in 1812, while serving as resident medical officer in the general hospital at Cadiz, the garrison of that fortress being then chiefly composed of British troops, who had been engaged in the memorable and disastrous expedition to Walcheren. Even in this country I met with a distinguished member of the English bar, who had just recovered from a severe attack of ague, supposed to have had its origin in a night journey across the Pontine marshes, under circumstances almost identical with my own. Now, this gentleman had, in the interim—that is, between autumn and spring—enjoyed his usual health: yet did his physician, one of the most eminent in England, consider that the marsh poison had lain dormant in the system during this long interval, until called into activity by a prolonged exposure, in an open carriage, to a keen easterly wind, exactly seven months after the supposed infection! The case of a lawyer, also, under precisely similar circumstances, was reported to me while in Edinburgh, with this difference only, that the period of incubation, as the phrase goes, was considerably less—about one-half—between the supposed introduction of the poison and the development of the disease. Recently, also,

Mrs. C., wife to one of the British merchants at Bahia, where she had resided for some years, and whence she had just returned, after a long sea voyage, was seized with a severe attack of ague, on the evening of her arrival in Cheltenham, months after she could by any possibility have been exposed to the influence of marsh miasm.

"Are we, then, in these and similar cases, really to believe that a poison has entered the system, and remained dormant and unchanged for months, nay, for years?"

"There is something so painfully unsatisfactory in our endless succession of medical theories, that the mind, in this as in other questions, longs for a resting-place: it feels the want of a *point d'appui*, and often, I am persuaded, actuated by that feeling, sees a little, and jumps to a conclusion, less from the force of the facts and cogency of the reasoning, than through the desire of enjoying some fruits for its labour, even if it be but the mere empty satisfaction of an hypothesis."

The residue of this lecture is devoted to a review of the conflicting opinions of medical authorities as to the source, nature, characteristic progress, and effects of the alleged marsh poison.

In the fifth lecture, Dr. Dundas presents the evidence derived from his personal experience in proof of the position that marsh miasmata and malaria are not the efficient cause of intermittent and remittent fever.

He commences with a description of Bahia, showing that in that city we have accumulated, in almost unexampled abundance, all those physical conditions which are deemed by physicians to constitute the elements essential for the generation of the most deadly scourges of humanity—epidemic and endemic diseases. The author further adds that, within the last twenty years, he has witnessed the city exposed, on three several occasions, to the combined horrors of siege and famine, with all their revolting contingencies.

"Yet," he adds, "notwithstanding this appalling combination of physical, moral, and social evils, universally admitted as the chief agents in producing the most extensive and fatal diseases, Bahia continued, and can, moreover, up to the present hour, boast the happy privilege of having escaped, since the period of its foundation, from every species of endemic or epidemic malady—*yellow fever, cholera, influenza, typhus, and dysentery.*"

Dr. D. remarks that the Brazilian and Portuguese merchants and shopkeepers, who inhabit the lower division of the city, and who rarely quit their dwellings, enjoy comparative immunity from intermittent fever, while those whose duties frequently lead them from the lower to the upper city often suffer from this disease, as well as from continued fever, without other apparent cause than the sudden transition from the warm, but equal temperature of the lower city, to a strong, cool, and humid sea-breeze, which they encounter while bathed in perspiration and exhausted by the labour of ascending a considerable eminence.

The singular salubrity of Bahia Dr. D. attributes to the equality of atmospheric temperature; to the serene, beautiful, and dewless nights; the healthy organization of the native Brazilian, his simple and abstemious diet, the absence of abject poverty, and the absence of those moral excitements resulting from the struggles and vicissitudes of European life.

The remainder of the lecture is devoted to a statement of facts adverse to the miasmatic origin of intermitting fever; the frequent occurrence of that disease in situations removed from all paludal and other supposed sources of miasm; and the occurrence in the same family, simultaneously, of ague, inflammatory fever, and typhus. From a careful investigation of the circumstances under which intermittent fever prevailed in Bahia and its vicinity, Dr.

D. was led to believe that it was probably attributable to exposure to moist sea-breezes. Under this supposition, adequate prophylactic measures were adopted in hospital and private practice, with the most favourable results.

The whole of this lecture is deserving of an attentive perusal. We regret that it is not within our power to present a more extended abstract of the leading facts embraced in it.

The sixth lecture commences with a description of Bomfim, a suburb adjoining the city of Bahia to the northward, and situated in the midst of a morass. It is partially subject to the influence of the tide, and consequently exposed to those deleterious effects which are believed to result from the intermixture of salt and fresh water, together with immense quantities of vegetable and animal matter, exuviae, &c., constantly acted on by the powerful influence of a tropical sun. Notwithstanding, we have here all the elements commonly deemed necessary for affording to marsh effluvia their most concentrated and deadly degree of intensity; yet Dr. D. assures us that the suburb of Bomfim enjoys the reputation of being, and is in reality, at certain seasons, one of the most healthy districts in Brazil. At that season of the year, when the sun, nearly vertical, exerts its greatest power, it is thronged with visitors, who pass a great portion of the night in the open air. Yet, during this season, a case of intermittent fever is almost unknown; while the towns situated on the sea-coast, at some miles to the northward and eastward—that is, to windward—of the hills bounding the Bomfim marsh, and consequently excluded from its influence, but exposed to the full sweep of the humid sea-breeze from the southern Atlantic, are notoriously subject to ague *at all seasons* of the year.

“The history of Bomfim, during the rainy or winter season, affords the strongest additional evidence,” remarks Dr. D., “in proof of the correctness of the explanation here offered. The wet season commonly sets in about the beginning of April, with a sudden change in the monsoon, when atmospheric vicissitudes—considerable for Bahia—often ensue; the rain descends in torrents, and converts the Bomfim marsh into one entire sheet of water; and, above all, the change of wind from about N.N.E. to S.S.E. at once deprives Bomfim of the protection of that range of hills already so often alluded to, and exposes it to the full force of a powerful monsoon, direct from the Southern Ocean. Under such circumstances, agreeably with the received doctrines, all noxious exhalations must be effectually arrested; yet what, in reality, do we now find to occur? We find that Bomfim, having been almost perfectly free from intermittent fever during the summer months, when it *ought* to have been absolutely uninhabitable, now becomes subject to that disease. How, then, are we to explain an anomaly so striking, and so inconsistent with the ordinary doctrine regarding the origin or production of ague? The following, I apprehend, will afford the correct solution:—

“In addition to the large amount of evaporation from such an extensive expanse of water, the powerful south-east monsoon, loaded with moisture, but necessarily free from any miasmatic contamination, now sweeps in, without the slightest impediment, direct from the Atlantic, and Bomfim is thus placed under precisely similar circumstances to the towns on the sea-coast above alluded to; and the results, as regards the health of the inhabitants, are precisely similar, and continue so until the change of the monsoon to the north-east, in October, again restores Bomfim its former hilly screen, and, at the same time, its wonted salubrity. The few permanent residents, chiefly of the lower classes, who continue to inhabit this district throughout the year, present the ordinary characteristics, though not strongly developed, of the dwellers in low and humid localities.

“It is especially worthy of remark, that, along the summit of the semicircle of hills, already described as bounding the marsh to windward, there are numerous habitations, entirely unsheltered, and constantly swept by a powerful sea-breeze direct from the ocean. *All* these, without exception, are greatly

subject to ague at *all* seasons of the year; while, as already stated, the houses placed below, in the centre of the swamp, are only affected at certain seasons, these seasons being precisely those during which the production of marsh exhalations must be deemed entirely suspended."

After presenting many other facts and considerations, which Dr. D. believes to be altogether inconsistent with the idea of a specific morbid exhalation from marshes or other situations in which large masses of vegetable matter are undergoing decomposition, he proceeds to consider the unity of febrile diseases. These he groups into three distinct classes, namely, fever without local action, fever with local action, and fever with a special action, and arising from a specific cause.

"In all the three classes," Dr. D. remarks, "the common feature of family resemblance is portrayed in the initial symptoms—the nervous depression of longer or shorter duration, the cold shivering and anserine skin, followed by the glowing heat and general perspiration.

"It is, indeed, more than probable that fever is the expression of a type of disease essentially one and uniform, but admitting of an almost endless variety of forms, the simplest being displayed in the single paroxysm of an ague. It is furthermore obvious, on the most cursory observation, that the description of fever as a disease has, in the generality of instances, been drawn for certain localities, and not from the whole group of febrile diseases, as witnessed in different parts of the world. The typhus fever of this country is superseded by the bilious remittent and intermittent in southern climates, by the plague in the Levant, and by the yellow fever within the tropics. Each of these maladies, under the special influence of climate, temperament, different modes of living, and numerous other agencies, affects certain peculiarities in its progress; but they are all distinctly impressed by the phenomena universally characteristic of fever as a genus of disease in every clime.

"Climate, indeed, and its varieties, whether permanent or temporary, always modify the animal economy, and induce, if I may be allowed the expression, an epidemic or endemic state of the human constitution exposed to its influence. This state will vary as the atmosphere may be cold or hot, dry or humid, pure or impure, variable or equable, stagnant or the reverse; the geological character of the country or district, also, and the numerous moral and physical conditions already alluded to, powerfully contribute towards the formation of this endemic constitution in man. Moreover, the history of epidemic and endemic diseases almost universally proves that, prior to their invasion, the country or district has been subjected, for a period more or less prolonged, to some well-marked deviation from the ordinary constitution of the inhabitants generally; so that the slightest disturbing cause, moral or physical, is followed by disease, the characteristics of which are determined as much by the constitution of the individual, as by the constitution of the atmosphere.

"An extensive acquaintance with the fevers of different regions of the globe has gradually established in my mind a conviction of their essential identity. And this has been confirmed since my return to Europe, in 1842, by my observation of the typhus fever of this country and of France, which, in its more intense form, differs rather in degree than in essence, from the remittent of hot climates, or the yellow fever, as I observed it during the epidemic of 1812-13 at Cadiz, while serving as resident medical officer at the general hospital for the reception of the sick of the army of Andalusia. In each, you have commonly the same tendency to remission, and there is no one symptom, even to the yellow skin and black vomit, which you will not find occasionally present in each of the three diseases, neither is there any one organ or system so constantly affected, nor any lesion so constantly detected on *post-mortem* examination as to characterize the several maladies. There is no one morbid result, in fact, in any of these forms, that you will not occasionally find in all."

"The remittent, or bilious remittent, of southern climates, I need scarcely observe, is simply a more intense form of intermittent, and differs only in severity of the symptoms, the less perfect remissions (intermission really ap-

plies to neither), and the greater disturbance of the organic functions. They are to be treated on the same principles, and are controlled, fortunately, by the same remedies."

The seventh lecture treats of the arrest of intermittent, remittent, and typhus fever by large and repeated doses of quinine. Dr. D. denies that the action of quinine is that of a tonic in the ordinary sense of the term; he maintains that its action is obviously on the nervous system, whose functions it favourably and rapidly modifies when they are depressed or exhausted by any of the numerous moral and physical agencies enumerated as the causes of fever, and thus it restores to the organic nervous system its normal influence over the animal fluids and the vital phenomena.

In a consideration of the exciting cause of fever, Dr. D. lays down the doctrine that nervous and vascular exhaustion being induced by excessive heat, laborious exertion, the depressing passions, &c., frequently accompanied by intemperance and other excesses, exposure to cold, damp atmosphere, or the sudden diminution of the temperature of the body, will then be sufficient to induce fever of the most intense grade.

"If we examine," Dr. D. remarks, "those instances which are especially put forward in proof of the action of a morbid poison on the system, we shall commonly find that they refer to soldiers and sailors engaged, in hot climates, on detached or fatigue duty, in dockyards, on watering expeditions, &c., and exposed to the intense rays of the sun, rendered doubly oppressive by reflection from the sides of the hills, or in the deep valleys, where such operations are most usually carried on. The cutaneous system (both in its nervous and its vascular elements) is brought into a state of the highest excitement by excessive heat and laborious exertion, frequently accompanied by intemperance and other excesses. Extreme exhaustion of the nervous system necessarily succeeds, and is followed by a collapse. Night comes on, with a *positive* difference in temperature, often more than thirty degrees, between the mid-day heat and the earth's surface towards sunrise. The nervous energies, animal and organic, being already profoundly depressed, and the faculty of evolving heat proportionately diminished, the men fall asleep, not only deprived of their ordinary protection, but with their light tropical clothing drenched in the chilly night-dew, and exposed to a brisk land or sea-breeze, to awake in all the horrors of ardent fever. A swamp, a morass, a fen, a something unknown (for, even advanced as we are in the knowledge of the laws of nature, there exists in the human mind an inherent tendency to look to some secret, hidden, and unrevealed influence), is at once accused as the sole agent, and, thus satisfied, all inquiry ceases. Now, this train of argument—inferring a pre-existing cause from certain effects—may be perfectly legitimate; but the cycle of logic is not equally correct, assuming that cause to be an unknown quality or essence, while it is matter of observation to every one that similar effects result from causes *known* and *patent* to all.

"For example, under the foregoing circumstances, the influence of cold and exhaustion, positive as well as relative, on the sentient extremities of the nerves, and the rapid depletion of the vascular system by profuse tropical perspiration, seem to be altogether forgotten. In such cases, the depressed or exhausted energies of the cutaneous nerves will lower, and occasionally even paralyze the capillary circulation, and thus deprive the nervous centres of the vivifying influence of vitalized blood; for the activity or diminution of the circulation depends less on an action in the heart than on an action in the capillaries. The energy of the peripheries of the incident nerves being thus depressed, the respiratory movements lessened in proportion to the diminished activity of the organic nervous functions, imperfect arterialization of the blood, with deficient circulation in the pulmonary and systemic capillaries, and defective depuration, necessarily ensue; and are followed by an arrest of the evolution of animal heat, and of the normal reaction between the blood and tissues—results highly deleterious at all times, but in some constitutions, and in certain states

of the system, as fatal as the most deadly poison, and often with almost equal rapidity. Surely, under such circumstances, we need not evoke the phantom Malaria, in order satisfactorily to account for the supervention of fever, or any other serious malady.

“*Ne Deus intersit, nisi digni vindice nodus.*”

“Neither has the influence of an occasionally large and sudden subtraction of the saline constituents directly from the serum of the blood, incident to over-exertion and exposure to the sun in hot climates, been hitherto duly estimated by physicians. Physiologists teach, and pathology confirms the fact that those elements are essential to the preservation of the circulating fluid from decomposition, for the black and dissolved condition of the blood, observed in the more rapid and fatal forms of tropical fever, is found almost invariably allied with great diminution or entire loss of its saline constituents. And this, I apprehend, is due, not to the exhaustion of these elements by the violence of the fever, but chiefly to their removal, which precedes the invasion of the disease and greatly influences its course.

“Moreover, you must all be cognizant, from the experiments of Hunter and others, of the immediate and decided impression which the sudden loss of even a few ounces of blood exercises on the general system, and, through it, on the constitution of the entire mass of the blood itself. So, likewise, will the exhaustion of the nervous power, and the sudden and rapid depletion of the animal fluids by the rapid and profuse perspiration incident to all laborious exertion in hot climates, often profoundly and immediately modify the whole animal economy. Thus, indeed, can we more satisfactorily explain the occurrence, from simple exposure to intense solar heat, of fevers similar in character to the most pernicious fevers of marshy districts, as observed by Dr. Murray; and most medical officers who have served in hot climates must have witnessed, as I have, a perfectly healthy man *walked* into a pernicious fever, ay, and quickly, when the atmosphere has been humid, hot, and sultry.

“In offering a solution of the above and analogous facts, we are much aided by the evidence of Sanctorius and others, who have shown that, independently of its direct depressing influence on the vital powers, a drenching perspiration (never absent under the above circumstances) will arrest, or seriously interrupt, the elimination of those digested or effete elements which are alone removed by insensible exhalation, and whose retention in the system is ever attended by the most formidable results.

“Moreover, the immediate influence of the organic nerves, in modifying the constitution of the blood, is now placed, by direct experiment, observation, and experience, beyond all rational question: nor can it be doubted that such morbid changes can be suddenly impressed on the blood, through the nervous system, as to transform the healthy man of to-day into a mass of disease by to-morrow, and that, too, independently of the introduction, *ab externo*, of a single particle of any morbid agent into the system. I need scarcely allude to the daily observed fact of the influence of a serious nervous shock in morbidly modifying the animal fluids. An instructive case in point, of fatal yellow fever following amputation in consequence of accident, is given by Sir George Ballingall, and our own hospital affords numerous analogous instances; whilst Dr. Hodgkin, in his interesting and valuable observations, has shown that, in certain states of the constitution, even a slight lesion is adequate to the production of similar morbid results—a fact to which I myself can bear testimony.

“We know, also, on the authority of Dr. Cheyne, that the most fatal cases of typhus fever will originate solely in anxiety and mental depression, without the individual having been exposed to any contaminating influence whatever; and I have repeatedly witnessed intermittent fever, of the most intractable character, originate under precisely similar circumstances, and, on one or two occasions, apparently from accidental loss of blood.

“How, also, does it occur that careful attention to all those measures which preserve the general health, sustain the nervous power, and support the capillary circulation, will completely annihilate the virulence of marsh poison? This is clearly proved, in numerous and well-authenticated instances, on the

coast of Africa, where, by careful attention to the general health and habits of the men, the use of woollen dresses, and protection by awning from the sun during the day, and during the night from exposure to the chill and humid atmosphere, ships' companies and boats' crews have been maintained in a state of perfect health, notwithstanding a long-continued exposure to all the ordinary exciting causes of African fever. Even so lately as July, 1850, we are told, on high authority, that with regard to the alleged unhealthiness of it (the coast of Africa), so nearly have European skill, science, and care, baffled the climate, that the African station is now as healthy as the rest of our naval stations in the tropics. And we are indebted to that distinguished physician, Sir James Clarke, for the following important and analogous facts—facts quite in accordance with my own experience in different quarters of the globe, but utterly inconsistent with the notion of a *specific poison*. He says that a person may sleep with perfect safety in the centre of the Pontine marshes, by keeping his room 'well heated by a fire during the night;' and again, that 'the exemption of the central parts of a large town from these fevers (malarious) is explained by the dryness of the atmosphere, and by the comparative equality of temperature which prevails there.' How does this occur? If there be a poison, it must be taken in either by the air-passages, or in deglutition, or absorbed by the skin. 'Having his room well heated' certainly cannot prevent the access of the malaria to the skin, or to the lungs; on the contrary, from the current maintained by a fire, a greater amount of air, and consequently of the poison incorporated with it, must necessarily have access to the lungs at each act of respiration. Deglutition taking place only when we are awake, all access through this channel is necessarily denied. Can we then believe that simply warming a room causes the poison to refuse to enter the system by the skin or by the lungs, though extensively diffused through the atmosphere? or, have we not, indeed, this obvious solution to the problem: *THERE IS NO POISON? De non apparentibus et non existentibus eadem est ratio.* Is not the dryness of the atmosphere, as well as its warmth by means of a fire, an adequate protection against the reduced temperature of the night, and little swerving from that enjoyed during the diurnal heat? Thus are sustained, especially during sleep, the organic nervous power, and consequently the activity of the universal capillary and respiratory functions, through which the normal reactions, so essential to health, are promoted and maintained.

"Such I believe to be a true solution of the foregoing remarkable and well-established fact, and explanatory of the invasion of or the immunity from febrile diseases in all warm climates. In those countries, you will please to recollect, the capillary vessels play a much more important part than in colder latitudes, and are, consequently, more exposed to derangement from their excessive and incessant action, maintained by the permanent stimulus of high temperature. This important system, therefore, soon becomes weakened, as do also the peripheral nerves, whose energies, being exhausted or depressed from the same cause, greatly increase, if they do not indeed originate, the general mischief. Prolonged exposure to the sun, residence in humid and sultry localities, excessive fatigue, debauch, the depressing passions, exhaustion from previous disease, &c. &c., will equally depress the organic nervous power and the capillary circulation, and thus establish a morbid sensibility and susceptibility to serious modification from such limited atmospheric changes as are caused by a strong humid breeze or other equally slight physical or moral influences, which, in a different state of the economy, would be either unattended with evil, or would pass altogether unnoticed. Moreover, in hot countries, all the internal organs sympathize largely and immediately with the slightest derangement of the dermoid membrane—and I am deeply convinced that such derangements constitute the immediate exciting cause of nineteenth-twentieths of the diseases (including all the fevers) to which Europeans are subject in hot and tropical climates.

"The comparative exemption from fever enjoyed by the Negro race in hot climates is another well-established fact; and its solution, I apprehend, will be found chiefly in the peculiar structure of the dermoid membrane of the black, in the abundant and often highly-offensive sebaceous or oleaginous secretion

with which the surface of the African is naturally anointed, and which preserves him against the effects of atmospheric changes. Also, the more energetic performance of the functions of the cutaneous system in the Negro, as compared with the European, renders him less subject to exhaustion in the hot and humid atmosphere of his native climate."

This perhaps unreasonably long extract from the work of Dr. D. will give our readers a very correct idea of his views in relation to the etiology of an important class of fevers—those usually considered to be the product of a miasmatic or malarious influence. These views are by no means new; they have been already broached and defended by several medical authorities of distinguished eminence. Dr. D. has presented them, however, in a very clear and concise form, and besides, has given them additional weight by the results of his own observations collected during many years' experience in many lands. They demand a careful consideration. The doctrine of a specific poison, generated during the slow decomposition of vegetable matter as a cause of fever, is fast losing ground, while the more rational opinion thus expressed by Dr. Bascome (*History of Epidemic Pestilences, &c.*, London, 1851), is attracting increased attention and additional advocates, as the etiology of endemic and epidemic diseases is more closely and systematically investigated.

"I take leave," says Dr. Bascome, "to reiterate my opinion—an opinion founded on a careful review of the foregoing history of epidemics—that all epidemic pestilences or diseases are to be accounted for on the principle of natural causes, viz., that atmospheric disturbance, consisting of variations of temperature, by hygrometric influence, atmospheric pressure, electrical tension, &c., are the exciting causes; while, on the other hand, want of light, impure air, especially from the want of ventilation, in which are included malaria and all other noxious vapours, *from whatever source arising*, scanty diet, and habits induced by the irregular artificial life of many, are the predisposing causes, which, by enervating and otherwise spoiling the system, render it more susceptible of external atmospheric impressions in the production of epidemic pestilence or disease."

The eighth lecture is devoted to a consideration of the causes of salubrity in Bahia, its equal temperature, its dry cool nights, its never-failing breeze, preventing a stagnant or calm state of the atmosphere, the temperate habits, orderly, cheerful, and equable disposition of the inhabitants. Dr. D. notices the recent political changes in Brazil, entailing others affecting the social and moral condition of the people of Bahia, and the influence which these changes have already exercised on the character and frequency of certain classes of diseases. He specifies the greater frequency of insanity, the increase of continued fevers, and of suppurative hepatitis, and the decrease of elephantiasis arabum. An interesting description of the latter disease as well as of the elephantiasis græcorum, which is of common occurrence at Bahia, is given.

The ninth lecture treats of the state of medical education in Bahia, and of the character and condition of the medical profession there. Having already extended our notice of the very interesting work of Dr. D. far beyond the limits we had originally intended, we cannot indulge in an examination of the topics embraced in the two concluding lectures. They, in common with those which precede, will amply repay an attentive perusal.

Appended to the volume are two papers, the one "On the Efficacy of Large and Frequent Doses of Quinine in arresting the Course of Continued Fever," originally published by the author in the *London Medical Times*, and the other "On the Arrest of Typhus Fever by Cinchonism," which appeared originally in the *London Journal of Medicine*.

From the latter we quote the following summary of the pathological and therapeutical views maintained by Dr. Dundas :—

"1. Ague and remittent fever do not originate in malaria or marsh poison.
 "2. Intermittent, remittent, and continued fever are mere varieties of the same disease. The intermittent constantly merges into the remittent or continued type, and continued fever assumes still more frequently (in Brazil) the intermittent form, and all are curable by the same agents. By the same agents we can arrest them all. Could this be done if they originated in different *specific* poisons? or can we arrest by any power the course of a truly specific disease, as smallpox, &c.?"

"3. The notion of typhus fever being unknown in the tropics is altogether unfounded. The intermittent and continued fevers of tropical climates often run into genuine typhus.

"4. Bark duly administered will generally arrest the intermittent and remittent fever; and typhus fever being essentially the same disease, bark ought to, and will generally arrest it.

"5. Ague will occasionally resist for many days the most judicious applications of quinine—and finally yield; the same remark applies to the typhus.

"6. Quinine is more certain in its results in proportion to its early administration, but is less to be depended on with the aged.

"7. The administration of large doses of quinine in typhus, when not curative, is *never* followed by the slightest ill effects.

"8. As typhus is commonly the more severe form of fever, and the subjects of its attacks generally less favourably disposed, so we shall find considerable discrepancy in the several results.

"9. Typhus will occasionally resist quinine, and yield to other remedies, and the same holds good with ague; yet, who ever associates the latter disease with any other remedy than quinine? And I am firmly of opinion that the time approaches when the treatment of typhus fever, after ages of vacillation, will be established on the same sure and satisfactory basis as that on which the treatment of ague now rests."

D. F. C.

ART. XXI.—*Du Rachitis, de la Fragilité des Os, de l'Osteomalacie.* Par E. J. BEYLARD (de Philadelphie), Docteur en Médecine de la Faculté de Paris, Membre de la Société Médicale d'Observation, Membre Correspondant de la Société de Biologie. Paris, 1852 : 4to. pp. 285. With 8 plates.
On Rachitis, Fragility of the Bones, and Osteomalacia. By E. J. BEYLARD, M.D., &c. &c.

DR. BEYLARD is, as the title-page of his book declares, a Philadelphian, who has pursued his medical studies, and obtained his degree in the doctorate of medicine in Paris. The volume which he has here presented to the profession is his inaugural thesis. The opportunities which Dr. Beylard has enjoyed for investigating the interesting and obscure pathological conditions or condition of which he has treated in this volume have been very great; particularly from the fact of his connection with Professor Trousseau, as also from his having had access to the large public and private pathological cabinets of the metropolis of France. From these sources of personal information, as well as from an extensive and careful study of the literature of his subject, he has derived the materials for his essay.

The prominent object of the author, in the prosecution of his investigations, "was to establish the position that the softening of the bones which some-

times affects adults differs in no respect from that morbid condition of children which is known as *rachitis*. The symptoms, the progress, the pathological anatomy, the effects of treatment, are the same in both; or, at least, the slight differences are readily explained by reference to the peculiarities of the skeleton at the different periods of life." (p. 20.) Accordingly, these affections are rigorously compared in all their pathological features; and we presume that most of our readers will, after perusing Dr. Beylard's volume, accept the conclusions at which he himself arrives.

We would not be understood to imply that Dr. Beylard assumes any claim to originality in adopting and urging this view. On the contrary, in many parts of the volume, frequent allusion is made to both ancient and modern authors who maintain the same opinion. Indeed, he states that, "until the time of Levacher de la Fleurtrie (in 1772), no writer attempted to establish a fundamental distinction between the softening of the bones of adults and that occurring in children" (p. 15); and the opinion most commonly received at present admits, we think, their identity.

After presenting a succinct historical sketch of the disease in question, in which the varied phases of conjecture, speculation, and observation which have been at different times elicited are briefly noted, the author fairly enters upon his subject by an investigation into the *etiology* of rachitis and osteomalacia, to each of which a separate chapter is devoted.

With regard to the important question as to the transmission of these affections from parent to offspring, Dr. Beylard inclines to the actual occurrence of such hereditary descent in both cases, and produces very apposite illustrations in support of his belief. But, as he remarks, it is not easy, particularly in reference to the softening of the bones of adults, to draw a positive line of separation between the influence of an hereditary taint, and that of accidental hygienic causes in the production of the morbid condition. It is difficult, however, in view of the instances cited here and elsewhere, to deny to the former a certain degree of predisposing, if not of more active, agency.

Many writers upon rachitis and its kindred affections ascribe to the operation of the scrofulous and tubercular cachexies a very considerable share in the causation of the first named diseases. Dr. Beylard does not admit this idea, but asserts, on the contrary, that the former excludes the latter. In the Children's Hospital in Paris, it is observed that there is about one rickety child to eighty afflicted with scrofula; and the remark made by Rokitsansky is a very cogent one in favour of this antagonism; he says of rickets: "It is associated with tubercle very rarely, considering that the deformity of the thorax, which rickets frequently occasions, brings on conditions suited to the development of that disease." (*Pathol. Anat.* vol. iii. p. 174, Sydenham Soc. ed.)

Rickets affects female children rather more frequently than males. Thus, according to M. Guérin's observations (*Mém. sur le Rachitis*), of 346 cases of the disease, 198 were girls, and 148 boys; Dr. Beylard admits this proportion. *Osteomalacia* likewise manifests a decided preference for the softer sex according to Marjolin, in the proportion of 20 to 1 of the male; to Gaspari, of 13 to 3; to Beylard, of 36 to 11 (p. 31). Thus it will be seen that females are even considerably more commonly the subjects of osteomalacia than of rickets. This circumstance is generally attributed to the influence of *gestation* in the adult female, which is, accordingly, by most writers considered as a powerful determining cause of softening of the bones. In 36 cases of this affection collected by Dr. Beylard among women, 15 of the patients had had children; in 16 no mention is made with reference to this point;

and the remaining 5 were girls who had had no children. Some writers have gone even so far as to maintain that there is a necessary connection between pregnancy, and lactation, and softening of the bones. Thus, M. Gubler (quoted at p. 19) contends that pregnancy *commonly* produces a certain degree of this condition. His chief arguments in support of this idea are, that phosphatic earths are largely excreted in the urine of pregnant women, as in that of persons suffering from rickets or osteomalacia; that reparation of injuries to the bones of pregnant women takes place tardily and imperfectly, as in the diseased states just mentioned; and he considers "the puerperal osteophyte," found so frequently on the internal face of the cranial bones of women who have died subsequently to conception, as the result of an effort of nature to repair a softened condition of those bones, similar to the process occurring in rickets. So that, according to M. Gubler, "osteomalacia, properly so called, which most commonly follows pregnancy, is but a more advanced step of the same rudimentary, and as it were normal, softening of the bones which has been hitherto misunderstood."

But such arguments as these, urged as conclusive and exclusive for M. Gubler's position, are worth nothing; for, first, cases of mollities ossium are not very infrequent in which the urine exhibits no phosphatic deposits (Stanley on *Diseases of Bones*, Am. ed. p. 191; M. Curling, *Med. Chir. Trans.* vol. xx. p. 371; Mr. Solly, *Med. Chir. Trans.* vol. xxvii. p. 441); and, moreover, the presence of phosphatic earths even in large quantities in the urine is of very common occurrence when the nervous system is in a depressed condition generally or locally, owing to functional as well as organic disturbances of the cerebro-spinal or organic nervous centres, without the osseous system being at all implicated. Secondly, the instances in which union does not occur after fractures in pregnant women are exceedingly exceptional, as is evident upon reference to statistical tables of fractures. Indeed, pseudarthrosis in the female is infinitely more rare than in the male; Dr. Norris (*American Journal*, Jan. 1842), in 147 reported cases found but 18 accredited to females; and Malgaigne (*Traité des Fractures*, p. 139) never saw but one instance of false joint after fracture in a female, and in this the patient was only three years old. The same inference is deducible from the remarkable paucity of recorded examples of non-union. Walker, of Oxford, met with only 6 or 8 in about 1000 fractures in both sexes; Liston saw in his large practice only 1; Peirson only 1 in 367; at the Pennsylvania Hospital, in 946 fractures treated from 1830 to 1840, not an instance occurred; according to Mr. Lonsdale, in nearly 4000 fractures brought to the Middlesex Hospital during ten years, only 5 or 6 examples of non-union were seen. (*Malgaigne*.) Now, if pregnancy or lactation necessarily induced a disposition even to a diminution of reparative action in the osseous system, records of non-union after fractures, and various other evidences of impaired and defective nutrition in the bones of pregnant and nursing women, would be much more common than they really are, for they are as liable to fracture as others. Finally, if "the puerperal osteophyte" is truly the expression and the result of a reparative action set up to remedy a precursory softening of the inner surface of the cranial bones, we should expect to find here and there patches of softening, at which points the reparation had not as yet commenced; but neither Rokitansky nor Ducrest makes any mention of such observations.

We take the opportunity of correcting here a mistake into which Dr. Beylard has inadvertently fallen. He speaks, at p. 19, of M. Ducrest as having discovered the existence and frequent occurrence of these osteophytic productions upon the inner surface of the crania of women who had died during or

after pregnancy. This interesting discovery was made by Rokitsansky, in Vienna; and the first account of the same was published in the *Oest. Medic. Jahrbüch*, vol. xv. (Rokitansky's *Pathological Anatomy*, vol. iii. p. 208, Syden. Soc. ed.). In fact, M. Ducrest himself mentions, in his essay (*Mém. de la Soc. Méd. d'Observation*), that a friend had informed him that a paper upon this subject had already been published "in a German journal," which, however, he (Ducrest) had not seen.

But to return to the relation existing between the puerperal condition and osteomalacia. Dr. Beylard, as does every other writer, acknowledges that a connection of some sort does exist between them, although he does not adopt the extreme views just alluded to. He expresses himself thus:—

"The influence of gestation or of parturition is indeed manifest upon the development and progress of the disease; for, after each renewed conception, there is a very sensible aggravation: the number of repetitions, however, is but of secondary consequence, the disease showing itself as well after a second or a third confinement, as after a fifth or a sixth." (p. 32.)

This effect may be merely accidental, induced by the impoverished nutrition and the depression which pregnancy and suckling, particularly if frequently repeated, are so often seen to occasion among the poor. Or it may be, indeed, as many suppose, a consequence of the abstraction from the blood of the mother, during the period of pregnancy and lactation, of the earthy materials which are essential to the constitution of the tissues, especially the osseous, of the child. So long as a proper supply of food is furnished to the parent, her assimilative functions being in a healthy condition, these elements are derived from the blood thus formed; but, under less favourable circumstances, it is probable that those of her tissues which contain the earthy elements most abundantly, or in a form most easily acted upon, will be deprived of them to the requisite degree. This supposition receives countenance from the observations that the teeth of pregnant women frequently become carious, and even loosened in consequence of absorption of the alveolar processes and enlargement of the sockets (Hohl, *Zur Pathologie des Beckens*, p. 99; Leipzig, 1852); that pregnant women very commonly manifest a craving for earthy matters; that, if fowls be deprived of their accustomed allowance of calcareous food, the eggs which they lay are destitute of a firm shell, their bones become softened and are easily broken, and the bones of their young are soft and flexible; it was observed, moreover, in some of these experiments, that death was preceded by colliquative diarrhœa, as is often the case in the human sufferer from mollities ossium, agreeably to the experience of Dr. Beylard (p. 49), and others (Henle, *Rationellen Pathologie*, vol. ii. p. 372).

The influence of *age* upon the production of rickets and osteomalacia is next inquired into. Of the three hundred and forty-six cases of rickets, adduced by M. Guérin, two hundred and nine became affected before the commencement of their fourth year; of these two hundred and nine, one hundred and seventy-eight began to suffer during their second year, and ninety-eight during their first. The majority of cases seen by Dr. Beylard occurred towards the close of the first year, or during the first six months of the second; and the frequency of their occurrence diminishes rapidly after this early age, until the period of puberty is passed, when the same disease, as Dr. Beylard thinks, again exhibits itself under the title of "osteomalacia," "rachitis adultorum," &c., its most common period being the ages of thirty and forty, after which it becomes more infrequent.

Dr. Beylard seems to have entirely overlooked an important contribution to this part of the pathology of the osseous system, by Dr. Elsässer, of Stuttgart.

This essay (*Der weiche Hinterkopf*, Stuttgart, 1843) possesses the more interest and consequence, because, although the occurrence of rickets during the first months of infantile life, and even as a congenital affection, had been long before witnessed and recorded by many writers, its frequency had, previously to Dr. Elsässer's publication, been very much underrated. This gentleman saw *forty* cases of this disease in five years, and in most of these the first symptoms manifested themselves within the *first six months after birth*, a period much earlier than that which is generally, and, by Dr. Beylard, assigned as the era of the ordinary invasion of rickets. Dr. Elsässer applies the terms "*soft occiput, or craniotabes*," to the particular phase of this affection as he observed it, because it attacked the cranial bones, and especially the occipital bone, producing in these changes precisely analogous to those which rickets occasions in other parts of the skeleton. When a cure was accomplished, which was the case in twenty-six of the forty cases, it was by an improvement of the general health, and by induration and consolidation of the previously softened bone, as in older persons; moreover, it not infrequently happened that other bones became involved in the disease either subsequently to its cure in its original seat, or while it was still progressing there. Like rickets and mollities ossium, as described by other writers, the craniotabes of Dr. Elsässer exhibited its dyscrasic character by the evidences of deranged health and its erratic and diffused attacks on various parts of the skeleton. We cannot forbear quoting one of the conclusions which the author draws from his observations upon this disease in all periods of life; we think it may serve to explain why, at particular epochs, it should preferably affect particular portions of the osseous system. "The erratic character of rickets is a fact beyond dispute. The rule, according to which this wandering of the disease takes place, is intimately connected with the phases of development of the principal parts of the body. It usually establishes itself in whichever part the vegetative and functional endowments are in the most active and energetic state of development. In this respect, the head, thorax, and extremities may be distinguished. With the changes in the development of the viscera, there takes place a corresponding change in the development of the bones which inclose them." (See a notice of Dr. Elsässer's book, in the *British and Foreign Medical Review*, vol. xvii.)

The symptoms of the disease in the youth and in the adult are next investigated by Dr. Beylard, and carefully compared the one with the other. It is unnecessary that we should accompany him through all these details. Suffice it to say that, viewing the entire range of symptoms, we have in no other essay upon this subject met with a more full and minute account of the progress of the disease, from the first exhibition of mere functional derangement of various organs to the fully-established change of structure in the bones themselves. The author thus indicates the conclusion at which he arrives from his careful comparison of the symptoms of softening of the bones at different ages; a conclusion, let us observe, in which he is sustained by the facts adduced.

"From the comparison which we have just presented of the symptoms of softening of the bones at different ages, it is seen that most of them completely accord with each other. If there is some slight differences, if the assimilation is not greater, it is in consequence of the rarity of rickets among adults. After a while, when the number of cases recorded shall have become increased so as to permit of a more thorough investigation, we have no doubt but that these discrepancies will be entirely reconciled." (p. 98.)

And again, at p. 100, he says—

"It is evident, from the parallel which we have instituted, that there is not a single symptom belonging to one of these two affections which is not common also to the other, in a different degree, it may be; but the physiological differences of the ages are so marked that they necessarily exert an influence upon the pathological phenomena."

Dr. Beylard would have made his position still stronger in favour of the identity of the two, if he had compared in a more direct and pointed manner that portion of the skeleton upon which rickets and osteomalacia are stated to impress their most distinctive characters, and to the peculiarities of which the supporters of the diversity of the two affections most complacently refer. We allude to the *pelvis*. It is undoubtedly a striking fact that at different periods of life the same disease should affect different parts of the osseous system, differently affect the same part, and even seize upon different portions of the same bone. Thus, admitting that rickets and osteomalacia constitute a pathological unit, we find it, according to Elsässer, most commonly attacking the cranial bones in the earliest months of infantile existence; a little later manifesting itself most constantly in a series of enlargements at the sternal extremities of the ribs, in connection with other modifications of the thoracic parietes—the whole forming a group of evidences much more pathognomonic, as Dr. Beylard thinks (p. 41), than any other at this age. Still farther on in childhood, the most prominent changes seem to be the enlargement of the articular extremities of the long bones (which is rarely seen after the age of fifteen to twenty, according to Dr. Beylard), the curvature of their shafts, and the consequent shortening of these bones; this category of symptoms is so constant in childhood that, in one hundred and ninety-six cases reported by Guérin, he saw but eleven in which there was not swelling of the epiphyses and diminution in the length of the long bones. In adult life the spinal column and the pelvis are the especial sufferers, the latter having impressed upon it such alterations of form as, agreeably to many very distinguished pathologists, permit it to be recognized and distinguished as the *osteomalacia*, in contradistinction to the *rachitic pelvis*. It is upon the truth or falsity of this assumed characteristic difference, we would have had Dr. Beylard more argumentative.

He says, at page 40, in speaking of the effects of *rickets*: "The bones of the pelvis become flattened (*s'applatissent*), and everted (*se renversent en dehors*); the diameters are shortened, the sacro-vertebral angle becomes more prominent, the ischia approach each other." We believe that the chapter on the symptomatology of rickets contains no other mention of pelvic deformity than the above. At page 52, he remarks, with reference to the influence of *osteomalacia* upon the adult pelvis: "The bones of the pelvis are spread out (*s'étalent*), the diameters are diminished, the crest of the ilium is everted (*se renverse en dehors*), and the sacro-vertebral angle is thrown forwards;" the chapter on the symptomatology of osteomalacia makes no other mention of the peculiar alteration impressed upon the shape and dimensions of the pelvis; and in that in which the symptoms of the two affections are compared, there is nothing more explicit or satisfactory upon this point. (*Ibid.* pp. 92-3.)

The characteristics of the *rickety pelvis*, as given by Kiwisch (*die Geburtskunde*, ii. Abth. s. 178), are "more or less remarkable smallness of the pelvis as a whole; diminished height of the same; compression of the pelvis in the direction of the conjugate diameter, so that the sacrum is thrown nearer than normally to the anterior wall of the pelvis, while its lateral parietes are more widely separated from each other. There is also a widening and flat-

tening of the pubic arch; an increased inclination forwards of the upper part of the sacrum, with a coincident recession of the inferior portion, whereby the straight diameter of the outlet of the cavity is relatively increased in length; a diminution of the concavity of the sacrum, of the pubes, and of the inner face of the iliac fossæ. A very common circumstance, likewise, is a more or less considerable lateral deviation of the sacrum, so that the pelvic cavity is rendered unsymmetrical." The same author gives the following as the most common form of the *osteomalacic pelvis*, p. 179: "The deep, almost excavated concavity of the iliac fossæ; the abnormal shape of the superior strait (like that of the heart on a playing-card); the unusually deep situation of the promontory of the sacrum, which is about opposite the middle of the pubic symphysis; the moderately beak-shaped projection of the anterior wall of the pelvis; the bending of the inferior portion of the sacrum, and the narrowing of the pubic arch." Now, it is evident that deformities of this kind, which depend chiefly upon the influence of pressure exerted upon the parietes of a cavity rendered pliable by softening of the bones which form them, must be gradually produced; and that, consequently, the degree and kind of deformity must vary according to the duration of the disease, the age of the patient, and the direction in which the pressure had been most exerted, *i. e.*, whether the individual had been confined to bed, occupying chiefly a position upon one or the other side, or whether her circumstances in life had necessitated, and the gradual progress of the disease had permitted her to continue more or less, the fulfilment of ordinary employments, in standing, sitting, walking, &c. Accordingly, all writers upon pelvic distortions describe numerous grades and forms which pass in a measure, by hardly perceptible degrees of difference, into each other. Thus, Kiwisch (*loc. cit.*) describes a rachitic pelvis, which he acknowledges at first sight is not to be distinguished from a genuine osteomalacic deformity. Rokitsansky (*Pathol. Anat.* vol. iii. p. 177, Sydenham Soc. ed.), speaking of the deformities induced by mollities ossium, says: "But these are not the invariable shapes; and the peculiar form of the pelvis" (the triangular, in which the shape of the superior aperture is like that of the heart on a card) "is not exclusively a result of mollities ossium, but is met with sometimes in bedridden persons who are the subjects of rickets in a high degree;" and again at p. 259, in describing the deformities of the pelvis, the same distinguished author observes: "The triangular pelvis is, for the most part, a result of mollities ossium; but it is an error to ascribe it exclusively to that disease. Mollities ossium may undoubtedly be the cause of every advanced and decided degree of triangular pelvis, but minor degrees of it are sometimes due to rickets." From these quotations it is evident that these two pathologists, though among the strongest advocates for the essential difference of the two, yet virtually admit that, so far as the pelvis is concerned, the distortions induced by them are but grades of the same.

Hohl (*op. cit.*) describes and figures several rachitic pelves, in some of which the deformity partakes of the character ascribed to the rachitic as well as that appropriated to the osteomalacic, *i. e.*, some of the bones are deformed after one fashion, and some after the other; and in two cases the appearances are not all those of the formula of the rachitic, but agree entirely with that of the genuine osteomalacic pelvis.

From these facts it would seem that, as too often happens in medical writings, a too hasty generalization has been made; the modifying influences of age, duration, progress, and stage of the disorder, habits of the patient, normal differences in the physical and chemical properties of the tissue and part implicated, &c., have not been sufficiently considered before assigning to a

particular group of symptoms or lesions a shelf apart in the nosological cabinet. And we would remark that inattention to these circumstances has not induced error with relation to the pelvic deformity alone. Rokitsky has stated (*op. cit.* p. 178) that in osteomalacia "the bone undergoes a striking change in its chemical composition, the extract produced by boiling being not only different from chondrin, but also from the animal matter of bone. Upon this last-mentioned character of mollities ossium very probably depends not only an essential difference between it and rickets, but also its malignancy; it is a very painful disease, and hitherto has never been cured." Without stopping to refute the asserted speciality of mollities ossium, as evidenced by the peculiarities mentioned in the last part of the quotation, we will simply state, on the authority of Hohl (p. 73), that if the bones of rickety children be examined at a certain period of the disease, viz., that which ushers in the reparative stage, it will be found that in these also the extract obtained by boiling is identical neither with chondrin nor with the peculiar animal matter of bone. Differences such as this should not surprise us, since we know that the chemical composition of bone varies at different ages, and even in different bones of the same skeleton. (*Vid.* paper of Dr. Rees "On the Chemical Constitution of the Bones," *Med.-Chir. Trans.* vol. xxi. pp. 406-413; *Simon's Chemistry*, vol. ii.)

Dr. Beylard next examines the pathological lesions produced in the osseous system, assigning to each of the two affections a separate chapter, and in a third the appearances found in each are compared; considerable space is likewise devoted to "*fragilitas ossium*." We cannot too highly commend the author for the able manner in which he has executed this part of his task. The details into which he has gone occupy more than 100 of these large and generally closely printed pages, and great industry was of course required to collect and arrange them; great candour and intelligence, too, are exhibited in their examination, and in the estimation of their absolute and relative importance. We quote the following general conclusions which he deduces from his laborious examination:—

"1. The three morbid states known as rickets, fragility, and osteomalacia, are identical in their nature, and constitute at most but three forms of one and the same nosological species; 2. If these three forms of a single disease have been separated into as many distinct affections, it has been because osteomalacia proper has been confounded with other alterations of the skeleton which are essentially different from it, and which have no other resemblance to it than the deformities which they occasion; or, because the authors of this separation have been contented with considering circumstances of merely secondary importance, such as the predominance of fragility or of softening, forgetting the impropriety of establishing distinct diseases simply upon varying degrees of a single symptom." (p. 227.)

Upon the *nature* of this interesting but obscure disease, Dr. Beylard throws no new light. Having already, in his preliminary historical sketch, alluded to several of the speculations concerning its essence, in this chapter he merely enumerates some others of the more prominent ones. In the concluding paragraph, he expresses the following cautious opinions:—

"Unfavourable hygienic conditions, an improper alimentation, are the most frequent causes of softening of the bones: its obscure and slow progress induces us to regard it as a lesion of nutrition which often induces a true cachexia. We do not deny, however, that in the course of its development an inflammatory condition may arise; the pain, the general exaltation of the animal temperature, with acceleration of the pulse, the swelling and the vascularity of the tissues, constitute a group of symptoms which it is difficult not to attribute to

inflammation. But is not this merely a secondary effect, and ought it not to be looked upon but as a means instituted by nature to repair the numerous lesions to which the whole osseous system has been subjected?"—(p. 231.)

We must certainly agree with the author as to the difficulty, at present, of unravelling this tangled skein of contradictory and conflicting statements. But we suspect that some part of the difficulty arises from the fact that several distinct diseases, apart from the scorbutic, syphilitic, and cancerous cachexias, have been represented in the motley array of bones assembled under the special banner of *osteomalacia*. We think there can be little doubt that, with reference to very many of the cases adduced, the diseased condition of the bones is to be ascribed to atrophy with fatty degeneration; such are certainly some of those specimens taken from persons of advanced age, or in whom senility had been prematurely induced, in both cases the morbid manifestations in the osseous system being accompanied with a similar degeneration of other tissues. Mr. Paget thinks that, perhaps without exception, the cases described by English writers as mollities ossium are examples of atrophy with fatty degeneration. ("Lectures on Nutrition," in the *Lond. Med. Gaz.* May, 1847; also, the *Pathol. Catal. of Royal Col. of Surgeons*, vols. ii. and v.) The texture of the bones in such cases has become exceedingly porous and light, the earthy constituents are diminished, or entirely wanting, and the animal matter no longer resembles the original; "therefore, the bones are not composed of the original animal part, but a new deposit of animal substance in a new form." (John Hunter, in *Pathol. Catalogue of Royal Col. Surg.* vol. ii. p. 28.) And again, the same illustrious man, in describing a particular specimen sent to him, says: "The component parts of the bone were totally altered, the structure being very different from other bones, and wholly composed of a new substance, resembling a species of fatty tumour, giving the appearance of a spongy bone deprived of its earth, and soaked in soft fat." The medulla of the bone, too, is changed, consisting of "free oil in great quantity; crystals of margarine, free or inclosed in fat-cells; a few fat-cells full of oil, as in health; but many more empty, collapsed, and rolled up in strange and deceptive forms. The pink and crimson colours are owing to part of the oil-globules, and to the nuclei and granules in the collapsed fat-cells, being thus coloured; and there is no appearance whatever of an excess of blood in the bone, or any of its contents." (Paget; see, also, Mr. Curling's paper, *op. cit.*; Rokitsansky, *op. cit.* vol. iii. p. 178; Günsburg, *Pathol. Geweb.* vol. ii.; Gluge, *Atlas der Pathol. Anatomie*.)

Relying upon this latter statement of Mr. Paget, as to the absence of evidences of inflammation of the numerous bones which he has examined and described, we see not how to avoid admitting that many other specimens of bones of children and of adults, usually considered as indicating the existence of the specific morbid process called softening, are really indicative of the operation of an *inflammatory process*. But the microscopical and chemical examinations of the bones are hitherto so unsatisfactory upon this point as not to warrant any very positive conclusion concerning it. The majority of those who have written upon this subject agree in describing the diseased bones as being abnormally vascular, and the periosteum red, thickened, and closely adherent to the superficial lamina of bone, so much so as sometimes to drag with itself, when torn off, a layer of the expanded and spongy tissue. (Rokitsansky, Beylard, &c.) But the existence of exudation or inflammatory globules in the pulpy matter found so largely in the medullary cavity and the cancellated structure of the bones, is by no means demonstrated, as a general rule, though this has been the case in some instances, and in some also pus

has been seen, as in the cases alluded to by Dr. Beylard. This opinion of the inflammatory nature of the changes receives some countenance from the pain and fever which usually accompany the disease throughout its whole progress. We should add, too, that this view is entertained by many eminent pathologists, among whom may be enumerated Henle, Mr. Solly, Schmidt, &c. The important question proposed by Dr. Beylard, and which we have already quoted, as to whether the inflammation is to be considered as the primary cause of the morbid appearances and symptoms, or only a secondary and reactionary effect, subservient to reparation, is, however, not at present susceptible of a satisfactory elucidation.

But it is not improbable that, admitting that some of the cases of rickets, or osteomalacia, are due to a fatty degeneration affecting the bones in common with other tissues, and that others again are to be ascribed to inflammation of a comparatively mild grade and of a modified character, there is yet a third group which may be regarded as the effect of some peculiarity of nutrition, different from the two which have been named, whereby a free acid is generated which liberates the phosphate of lime deposited in the bones, or prevents the proper deposition of this salt, and permits the latter to be thrown off in the urine. This acid is generally supposed to be the *Lactic*. The chief arguments in support of the supposition are: the remarkably large amount of phosphates contained in the urine of rachitic patients, leading even to the frequent formation of phosphatic calculi; the presence in quantity of acid in the alimentary canal, and the copious acid sweats. That the acid is the lactic is maintained from the fact that the disease is most prevalent in pregnant and nursing women, and in infants and young children; and that lactic acid may sometimes be detected in the interior of the diseased bones. (Schmidt, in Henle, *op. cit.* p. 371.) The earthy matter being in this way removed from the bones, and the latter being left in a diseased condition, the appearances of inflammation which they present may be the result of the reparative effort established to remedy the lesion.

The chapter on the *Diagnosis* of rickets is very well written, and presents to the reader an excellent bird's-eye view of the whole subject. Next follows a short chapter on the *Prognosis*; and the volume concludes with quite a detailed exposition of the treatment to be pursued in this most pitiable disease.

Dr. Beylard recommends most highly the cod-liver oil, in conjunction with good diet and proper hygienic means. And it would appear from his statements that the fish-oil may be with equal advantage replaced by *butter*—a pleasant exchange, truly.

In terminating our notice of Dr. Beylard's book, we must not neglect to mention that it contains a great many histories of cases of rachitic disease, which are in themselves of immense importance to the student. He has also appended a very copious bibliographical index, which contains, with few exceptions, all the desirable references to the subject of which he has been treating.

It is scarcely necessary for us to express formally our high appreciation of this work, because this has repeatedly escaped us in the course of our remarks. We now take our leave of the author, in the confident hope that the industry and intelligence which he has displayed in his Thesis will characterize and reward his future labours in the field which he has selected.

F. W. S.

ART. XXII.—*De Adipis Concoctione et Absorptione. Scripsit ED. LENTZ.*
Mitavie, 1850. 8vo. pp. 94.

De Bilis Functione ope Fistulæ Vesicæ Felleæ indagata. Scripsit REINHOLD
SCHELLBACH. Mitavie, 1850. 8vo. pp. 44.

On the Digestion and Absorption of Fat. By ED. LENTZ.

The Function of the Bile investigated in a Case of Fistula of the Gall-Bladder.
By R. SCHELLBACH.

THE modification which fatty matters, taken into the stomach as food, undergo prior to their absorption by the lacteals, and the agents by which that modification is effected, are still subjects in dispute among physiologists. As fat is but slightly, if at all acted upon by the digestive fluids of the stomach, it is evident that whatever changes it undergoes to fit it for absorption must take place mainly in the intestines. Here it is supposed by some to undergo a chemical modification by its combination with the bile, with the pancreatic juice, or with certain alkaline secretions furnished by the intestinal mucous membrane; by others, it is maintained that the only change effected in it is a mechanical disintegration—an emulsion being formed by its combination with the bile, pancreatic juice, or the other intestinal fluids, either singly or collectively; while a third party consider that it is merely liquefied by the heat of the stomach and intestines, and in this state is taken up by the absorbents.

The doctrine of the chemical action of the bile upon the fatty or oily substances taken into the stomach as food—the change of these by the bile into a kind of soap—is a very old one. It is laid down by Haller, who cites as its supporters, among his predecessors and contemporaries, Steller, Floyer, Dossie, Baglivi, Vischer, Hoffman, and Homberg.

Among the modern physiologists, the same opinion is advocated by Leuret and Lassaigne, and by Valentin, although the latter does not appear to consider the saponification of fat by the bile as essential to its absorption.

The arguments adduced by Haller in proof of the action of the bile upon fatty aliment are altogether inconclusive. They are derived from the appearance of the alvine discharges in jaundice, and in obstructions of the biliary duct; from the white discharges which occur in infants, and from the fact that bile will remove the stains produced by oil. These arguments are examined in detail by Dr. Lentz, who remarks that certain modern physiologists, as for example Canstatt, in his *Manual of Clinical Medicine*, published in 1845, admit that fat is one of the excrements voided by patients labouring under jaundice and calculus of the gall-bladder. But, he adds, in all these observations, we look in vain for the chemical demonstration of the presence of fat in the excrements, for an accurate computation of the fat consumed by the patients, and for the proof of any positive connection between the presence of fat in the excrements and the disturbance of the biliary secretion. It is to be recollected that jaundice frequently occurs without any trace of fat in the discharges per anum. The fact of the occurrence of fat in the stools, Bernard adduces in evidence of a diseased condition of the pancreas.

The discharge of fat from the bowels may, however, take place independent of disease of either of the organs concerned in digestion. The digestion of fat is not effected to the same extent in every individual and at all times, even in a state of the most perfect health; consequently, when an excess of fat is taken into the stomach, the portion not absorbed by the lacteals will be found to pass off from the bowels mixed with the feces.

Dr. Lentz admits that the bile will dissolve the fatty acids which have an affinity for the alkaline portion of the bile, and hence will remove grease spots whenever the fat, by which they are produced, has become changed into an acid. This is the same explanation as that given by Bernard. "Nevertheless," remarks the latter, "it is known that bile will remove the stains produced by grease; we obtain the explanation of these facts, in appearance contradictory, when we learn that the bile dissolves the fatty acids."

"A direct experiment performed by me," says Dr. Lentz, "proves that bile will form salts with the acids of fat. By a solution of caustic potass, olive oil was converted into soap, and the alkali afterwards separated by muriatic acid; 11,5 CC. of the strained oleic acid, with the same quantity of recent ox bile, was combined by agitation, and the mixture was set aside for six days in a temperature of 35° C. After twenty-four hours, it presented three different strata, which became more and more distinctly separated. On the sixth day it was found that the inferior stratum consisted of pure bile, equal to 10 CC.; the superior stratum, consisting of oily acids, equalled 7,5 CC.; while the middle stratum was of a pale greenish colour, and equal to 5,5 CC. It was soluble in water, to which it imparted a greenish hue, and presented under the microscope a multitude of crystals. Upon the addition of a small portion of ether, it yielded a quantity of free oleic acid, and treated with muriatic acid it divided into two strata, of which the superior consisted of oleic acid, and the inferior of a solution of the muriate of soda. A similar experiment with the bile of a dog was subsequently performed with the same results.

"There can be no doubt, therefore, that the union of the bile and fatty acids forms a species of soap soluble in water; and, consequently, that, by its union with the acids of the fat in the intestinal canal, the bile may favour their absorption."

The errors and inconclusiveness of the experiments of Leuret and Lassaigne, undertaken to prove the direct agency of the bile in the digestion of the food, are very clearly pointed out by Dr. Lentz. In the experiments of Tiedemann and Gmelin, undertaken to test the power of bile to dissolve fat, a negative result invariably ensued; which is also the experience of Eberle, and more recently of Frerichs.

Dr. Lentz repeated the experiments of Leuret and Lassaigne, to show the action of bile upon crude flesh; from the result of which he infers that the loss of weight which portions of flesh occasionally undergo when subjected to the action of bile out of the body does not depend upon the solution of the fat they contain, inasmuch as a similar loss occurs when distilled water is substituted for the bile, in which latter case it is evident that no solution of fat can take place.

Some recent physiologists believe that the digestion of fatty aliment is due entirely to a chemical change produced in it by the pancreatic juice.

Bernard was the first to demonstrate that out of the animal body the pancreatic juice has power to separate the acids existing in neutral fatty matter from their bases. Frerichs refers to the experiments on this subject performed by Bernard, and to the confirmation of their accuracy by the Parisian academy, but, in adopting their conclusions, does not intimate whether these were tested by himself, upon a repetition of the experiments. Nevertheless, as Dr. Lentz remarks, these experiments have been repeatedly performed and always with the same results; but, he adds, let us inquire whether the same result is also produced in the animal body during life by the action of the pancreatic juice upon neutral fatty substances. To this intent, three cats were fed by him upon butter and killed, the one six, the other fourteen, and the third twenty hours after feeding, and the contents of the stomach, intestines, thoracic duct, vena portae, and gall-bladder examined, but not a vestige of butyric acid could be

detected, notwithstanding all the chyloferous vessels, as well as the thoracic duct, were turgid with milky chyle.

The abdomen in two cats, that had been kept from food for thirty-six hours, was laid open by an incision along the linea alba; the duodenum, with the pylorus, were then brought out at the opening, and a ligature was applied near to the latter so as to prevent the passage of the gastric juice into the intestine. A few lines below the ligature, a small incision was made into the duodenum, through which a quantity of liquefied butter was introduced, its escape being prevented by another ligature applied above the openings of the ductus choledochus and the duct of the pancreas, so as to allow the bile and pancreatic juice to enter freely into the intestine. The duodenum being returned into the abdomen, the wound of the latter was closed by a few stitches. The one animal was killed at the termination of nine, and the other at the termination of eleven hours. In both, the contents of the intestinal canal, which had lost its normal temperature, exhaled very distinctly the odour of butyric acid, and when tested with litmus paper indicated their acid character. But in neither animal was the odour of butyric acid evident in the contents of the thoracic duct, vena portæ, or gall-bladder, whether these were examined when cold or after being warmed, nor could any trace of this acid be detected when they were tested by the action of heated sulphuric acid.

In order to test whether, in the experiments just related, the butyric acid was developed solely by the spontaneous decomposition of the butter at the temperature of the animal body, in the short period indicated, or by the action of the pancreatic juice upon the butter introduced into the intestines, Dr. Lentz repeated the same experiments upon three cats, with this difference, that the upper ligature, instead of being applied near the pylorus, was passed below the orifices of the pancreatic duct and ductus choledochus, so that in these experiments not only was the gastric juice excluded from the intestines, but also the bile and pancreatic juice. Neither of the animals was permitted to partake of food for thirty-six hours previous to the operation. Through an opening made into the duodenum below the ligature above described, a quantity of butter was introduced, the escape of which was prevented by the application of a second ligature, as in the preceding experiments. One of the cats was killed seven hours subsequently, and the other two five hours later. In neither could the odour of butyric acid be detected in the contents of the intestines, thoracic duct, gall-bladder, or vena portæ, nor was any trace of acidity detected by litmus paper.

Five other experiments were performed by tying the pancreatic duct in cats above its termination in the duodenum, so that all the digestive fluids, with the exception of the pancreatic juice, found their way into the intestines, and once in a cat in which the pancreatic duct and ductus choledochus were both tied above their opening into the duodenum, the bile being allowed to flow exteriorly through a fistulous opening in the gall-bladder. In four of the animals, no trace of butyric acid could be detected in the contents of the intestines, in the bile or in the blood of the vena portæ; nor in the contents of the thoracic duct, in the one animal in which alone these were examined. The examination was made, in one case, six hours after feeding; in a second, fourteen hours after feeding; in a third, thirty hours after one meal, and eight hours after a second; in a fourth, forty-eight hours after one, and five after a second meal. In the fifth experiment, the animal was killed twenty-seven hours after one meal and six after a second; from the contents of the large intestines, the butter they contained was extracted by means of ether; the ether being then evaporated, and the remaining fatty matter treated by heated sulphuric acid, it gave out a very decided odour of butyric acid.

The sixth animal, in which both the pancreatic duct and ductus choledochus were tied, was killed forty-eight hours after one, and nine hours after a second meal. Neither the contents of the intestines, those of the thoracic duct, nor those of the vena portæ, exhaled any odour of butyric acid.

From the foregoing fourteen experiments, Dr. Lentz draws the following conclusions:—

1st. Fat contained in the chyloferous vessels enters these, in the greatest amount, at least when nothing disturbs the normal process of absorption, in its neutral state.

2d. Fat, if it be exposed for any time to a degree of heat equal to that of the intestinal canal of the mammalia, in the absence of the pancreatic juice, may become decomposed, spontaneously, in the animal body, into its acids and their bases, as is shown by the thirteenth of the series of experiments described above.

3d. The acid of the gastric juice impedes the decomposition of neutral fat by the pancreatic juice, in the animal body.

To test the truth of these three propositions, Dr. Lentz performed a number of experiments out of the body by the admixture of pancreatic juice, gastric juice, and bile with neutral fat, as presented in the form of butter, and with starch. The results of these experiments were as follows:—

1. Although, when pancreatic juice was largely diluted by the addition of distilled water, so that the latter was as six or twelve parts to one of the former, its action upon neutral fats was not impeded.

2. Nevertheless, when a large quantity of bile was added to pancreatic juice, so that the former was as thirteen or seventeen parts to one of the latter, the action of the pancreatic juice in the decomposition of neutral fats, and in the transformation of starch into sugar, was impeded.

3. Gastric juice impeded the action of the pancreatic juice upon neutral fats, and the more so the greater the amount of acid the former contained; so that sometimes the action of the pancreatic juice was entirely suspended. This effect of the gastric juice was exhibited even when the amount of the latter was less than that of the pancreatic juice (100 parts pancreatic juice, and 74 parts of gastric juice), generally when the quantity of the latter was double that of the former, and always, when it was four times or more.

4. The admixture of gastric with the fluid of the pancreas did not impede, in the same manner, the action of the latter in the conversion of starch into sugar.

5. This effect of the gastric juice in impeding the action of the pancreatic fluid upon fatty matter was destroyed by neutralizing the acid contained in it, either by the soda of the bile, or by the addition of caustic potass.

6. The action of the pancreatic juice upon neutral fats was also impeded by the addition of other acids than that of the gastric juice, and was again restored by the neutralization of these by the soda of the bile.

Dr. Lentz remarks that, if the above deductions from the experiments performed by him are correct, it is easy to understand why, in the living body, the gastric juice, under favourable circumstances, should not impede the solution of the neutral fats by the pancreatic juice. This effect of the gastric juice being prevented, if the alkaline fluid with which it is mixed is sufficient to destroy its acidity; the pancreatic juice then being enabled to act upon the fat in the neutral contents of the intestines.

As from observation it is found that the greater portion of the fat contained in the chyle is in a neutral state, it is manifest that the power of the pancreatic juice to decompose, out of the living animal body, neutral fats into acids and

their bases, contributes nothing to explain the manner in which the lacteals are enabled to take up neutral fat from the intestinal canal.

De Lentz adds, in a note, before it can be predicted with any degree of certainty whether neutral fat will be dissolved, within the living body, by the pancreatic juice, it would be necessary for us to determine the quantity of this fluid as well as of the gastric juice, of the proper intestinal fluid, and of the bile, that is secreted during digestion, as well as the amount of acid and of alkali contained in these secretions. It is probable that the condition of the food taken into the stomach exerts, also, some influence. If it contain a considerable quantity of alkali, it may facilitate the solution of the fat by neutralizing the gastric juice; while, on the other hand, if it contain a large amount of acid, it will impede the action of the pancreatic juice in its action on the fat.

Dr. Matteucci, of Pisa, reports some experiments to prove that the fatty portion of the aliment of animals undergoes a change to adapt it for absorption by the action upon it of the alkaline fluids secreted by the intestinal mucous membrane. His first experiment was performed by adding olive oil to a weak solution of an alkali, and then exposing the mixture to a temperature of 35–40° C. The mixture assumed a milky appearance, and separated into two strata, of which the upper remained opaque and contained globules of oil; the inferior stratum was less opaque, and had in all respects the appearance of milk. With this "*emulsion*" the doctor filled a portion of intestine, which, after securing the ends, he immersed in a similar weak alkaline solution, and exposed the whole to a temperature of 35–40° C., when, in accordance with the laws of the diffusibility of fluids, the contents of the intestine became mixed with the alkaline solution without. A second experiment similar to this was performed with a like result. An endosmometer, formed of the urinary bladder of an ox, was then filled with a weaker alkaline solution, and immersed in the emulsion above described. The emulsion passed into the alkaline solution, and elevated the column of liquor thirty millimetres.

In a third experiment, two funnels of equal size were filled with sand; upon this, in one, water was poured, and upon the other an alkaline solution, until these fluids passed entirely through the sand. An equal quantity of oil was now slowly poured upon the sand in both funnels. The oil was quickly imbibed by the sand imbued with the alkaline solution, but remained at the surface in the one containing the sand moistened with water.

Dr. L. frankly acknowledges that he cannot understand the idea Dr. Matteucci desires to convey by the term *emulsion*, used by him in the detail of his experiments. An *emulsion*, it is well understood, designates simply a minute mechanical distribution of oily particles throughout an aqueous fluid, by the intervention of some viscid matter which is miscible with both oil and water. Now it is evident that in the experiments of Dr. M. no such mechanical distribution of oil in an aqueous fluid could have taken place; on the contrary, a saponification of the oil was effected, as is always the case when oil is mixed with an alkaline fluid and exposed to an elevated temperature. If to this opinion it be objected that, in the first experiment, globules of oil were still present in the upper stratum of the mixture, the cause of this phenomenon can readily be explained by the fact that the alkaline solution was not sufficiently strong to convert the whole of the oil into soap; consequently, the portion that remained unchanged was found floating in globules upon the surface.

In regard to the experiment adduced to exhibit the endosmose of fat, this exhibits nothing surprising; between the solution of soap and that of alkali there exists a chemical affinity, and consequently their commixture is

readily explained by the laws of the diffusibility of fluids. But neither of Dr. M.'s experiments contributes anything towards the explanation of the process by which fat is adapted for absorption into the chyloferous vessels, inasmuch as the greater portion by far of the fat contained in the latter has been shown to be in a neutral form.

Now, Dr. L. concludes, it must be evident that, by the experiments he has detailed, the opinions which involve a chemical change of the neutral fat taken into the stomach as food, either by the bile, the pancreatic juice, or by the proper fluid of the intestines, in order to fit it for absorption by the lacteals, are refuted. Because, 1st, such a change has been shown not to have taken place in the fat contained in the chyle, or at least in by far the greater portion of it, by the chemical and microscopic examination of the contents of the lacteals.

Because, 2d, it has been proved that no one of the secretions by which such a change could be alone effected—neither the bile, pancreatic juice, nor the fluids secreted by the mucous coat of the intestines—has the power to decompose fat so as to separate its acids from their bases. But, on the contrary, in the living animal body, provided all the functions are in a normal state, the acid of the gastric juice prevents its occurrence.

By several modern physiologists it is supposed that the only change that fat undergoes, to adapt it for absorption by the lacteal vessels, is a minute mechanical division—its minute mechanical distribution throughout one or other of the fluids of the intestines, with which fluid the fat is supposed to form an emulsion.

Bernard supposes that it is the pancreatic juice by which this mechanical distribution of fat is produced; others ascribe this effect to the joint action of the bile and pancreatic juice, and others, again, to the proper fluid of the intestines.

These views are examined in some detail by Dr. Lentz, by whom the accuracy of the arguments and experiments adduced in their support is very carefully tested. By a series of experiments performed upon living animals, he has shown that the ligature of the pancreatic duct, or of the ductus choledochus, or of both, does not prevent the absorption of fat by the chyloferous vessels, while, indirectly, he proves, also, by a long series of experiments, that the supposed minute mechanical distribution of the fat taken as aliment is not effected by any or all of the other fluids usually present in the cavity of the intestines during life.

Boussingault performed a series of carefully conducted experiments upon ducks, to determine the quantity of fat absorbed from the intestines within a given period. From these experiments it would appear that the quantity of fat absorbed in one hour was very nearly the same, however abundantly the food may have been charged with fatty matter; thus, when the animals were fed on cacao, which affords about one-half its weight of a butyraceous matter, upon lard, or upon butter mixed with rice, the quantity of fat absorbed was limited to about eight decigrammes in the hour.

Now, as in all of these experiments the quantity of water taken by the animals which were the subjects of them, and the quantity of fatty matter consumed by them varied, how can the fact of the same amount of fat being taken up by the lacteals within a given period be explained upon the supposition that it is necessary to fit it for absorption that the fat should first be formed into an emulsion with some aqueous fluid? If this latter opinion be well founded, it would be reasonable to infer that the quantity of fat absorbed from the intestines would be in direct proportion to the quantity that

is formed into an emulsion within a given time, and which of course must vary with the quantity of fluid, as well as of fat, present in the intestinal canal. It may be affirmed, however, that the amount of fat formed into an emulsion adapted for absorption depends entirely upon the quantity of the agent through the intermedium of which its mechanical diffusion in an aqueous fluid is effected, and that this agent, existing either in the bile, pancreatic juice, or in the proper fluids of the intestines, or formed by a combination of one or more of these, is, under normal circumstances, furnished always in very nearly the same amount. But, if this be true, then whatever diminishes the quantity of this agent by which the emulsion of the fat is supposed to be effected, must necessarily diminish the absorption of the latter. To test this, Dr. Lentz has performed a number of very interesting experiments.

From these, it appears that, in animals fed upon aliment containing a large amount of adipose matter, there is absorbed from the intestines, within a given period, very nearly the same amount of fat, relative to the weight of the animal, under all circumstances. That is, whether the bile and pancreatic juice are freely secreted, or one or both of these fluids be prevented from entering the intestines. Hence we cannot assume that, to adapt it for absorption, the fat taken as aliment must be first converted into an emulsion by either or both of them. The agency of the proper fluid of the intestines, to which Valentin and Frerichs ascribe the office of converting fat into an emulsion, cannot, it is evident, be tested by direct experiment; but, as the only property possessed by it that can adapt it to the emulsion of fat exists also in the bile and pancreatic juice, and in the latter to a much greater extent even than in the fluid secreted by the intestinal mucous membrane, it must be evident that the influence of the latter in causing such emulsion cannot be superior, if equal, to that of both the others; and yet, although their exclusion must necessarily cause a less amount of the fat taken into the alimentary canal to be formed into an emulsion, still, as the experiments of Dr. Lentz prove, the amount of fat absorbed suffers no diminution.

The only remaining doctrine in relation to the state in which fat is absorbed by the lactiferous vessels, is that, in its neutral state, when fluid, it is absorbed without further change; but when solid, all that is necessary to prepare it for absorption is that it be liquefied by the heat of the intestinal canal. This is the opinion of Wagner, who supposes that, during digestion, the fat in a liquid state is absorbed by certain portions of the internal surface of the intestines while the aqueous fluids are taken up at other portions. Frerichs supposes the epithelial cells at the apices of the intestinal villi to preside over the absorption of fat.

Weber believes that, besides the epithelial covering of the villi, there exists a stratum of cells of a globular form, some of which possess the power to absorb a white non-pellucid liquor, while others absorb a pellucid fluid like oil.

The opinion of Wagner, that during digestion the function of absorption is so distributed over the internal coat of the intestines that at some points always fat, and at others always aqueous fluids are taken up, affords no explanation, according to Dr. Lentz, of the manner in which fat is absorbed. It appears to him more probable that certain cells, or congregations of cells, have the sole faculty of absorbing fat, and which never receive any aqueous fluids. Such a hypothesis is perfectly consistent with the fact that a certain amount of fat, in proportion to the weight of their bodies, is absorbed from the intestines of animals in a given space of time. We are only to suppose that this fat-absorbing apparatus is limited in extent, varying only in proportion to the size of each animal, and we can readily understand that it will be able to take up and transmit only a certain quantity of fat in a given period of time.

The general conclusions legitimately deducible from the experiments of Dr. Lentz are:—

1. That the neutral fats are taken up by the lactiferous vessels, without any chemical change being previously effected in them by either the bile, pancreatic juice, or proper secretions of the intestinal tube.

2. That the minute mechanical division of fat in the tract of the intestines, or its change into an emulsion by the bile, pancreatic juice, or intestinal secretions, is in no degree necessary to fit it for absorption.

The following conclusions are, to say the least, rendered probable by the experiments performed by the author:—

1. That the change effected in neutral fats by the pancreatic juice out of the animal body—that is, their decomposition into their acids and bases—is impeded in the intestinal canal by the acid of the gastric juice.

2. That the quantity of fat absorbed from the intestines of any given animal, within a certain period, is limited; and that, provided a sufficient amount of fat is taken into the stomach, this quantity, under a normal condition of things, is at all times very nearly the same.

Still further experiments are required to determine:—

1. Whether any, and how much, fat is absorbed in the stomach itself.

2. Whether it is absolutely necessary to the absorption of fat by the chyliferous vessels that it be liquefied by the heat of the intestines.

The entire essay of Dr. Lentz is replete with interest. The several series of experiments appear to have been well devised and carefully executed, while the conclusions based upon them have all the semblance of legitimate deductions. It is true that, in regard to the conclusions drawn from those experiments in which the abdomen of the living animal was laid open and ligatures were applied to the pancreatic duct, the ductus choledochus, and to the duodenum, it may be objected that the results obtained cannot be assumed to represent positively the manner in which fat is absorbed under the ordinary circumstances of health, and while all the digestive organs remain in their normal condition; still, the experiments are so varied, in different cases, as in some measure to obviate the errors that might be expected to result from the disturbance of, or the unnatural condition of the functions produced by them.

We should have been pleased to present our readers with a detailed account of the several series of experiments instituted by the author, to enable them to judge of the correctness of the general conclusions he has drawn from each. But to have done this would have extended this notice of Dr. Lentz's work to a most unreasonable length. Every particular of an experiment must be given in order to present fairly its accuracy, and its true value in the settlement of the question to solve which it was undertaken.

The deductions of Dr. Schellbach, in regard to the function of the bile, are based mainly upon the result of observations made in the case of a dog in which an artificial fistula of the gall-bladder was formed, so that all the bile was discharged externally. These observations are limited in extent, and do not appear to sustain the conclusions drawn from them by the author, at least in reference to the main question investigated by Dr. Lentz. Dr. Schellbach believes that the bile is the essential agent in effecting the absorption of fatty matters from the intestines; but we confess that we cannot see that this position is absolutely proved by any of the facts connected with the experiments detailed by him, and upon which it is mainly based.

D. F. C.

ART. XXIII.—*The Principles and Practice of Surgery. Illustrated by three hundred and sixteen engravings on wood.* By WILLIAM PIRRIE, F. R. S. E., Regius Professor of Surgery in the Marischal College and University of Aberdeen; Surgeon to the Royal Infirmary, &c. &c. Edited, with Additions, by JOHN NEILL, M. D., Surgeon to the Pennsylvania Hospital, Demonstrator of Anatomy in the University of Pennsylvania, &c. Philadelphia: Blanchard and Lea, 1852: Octavo, pp. 784, including an index.

THIS is a very handsome American edition of an already popular production, albeit from a new competitor in the field of British surgical instruction. The favour with which it has been greeted on both sides of the Atlantic will more than justify the author's venture and its immediate re-issue in this country, whilst it proves that he has struck upon a vein that was not by any means exhausted. Notwithstanding the Californian profusion with which works on surgery in the shape of reprints and translations, as well as native publications, have been pouring from the press, we are glad to find some prospect left for elementary text-books on this prolific subject. The practitioner may revel to his heart's content, or entire confusion as the case may be, amidst all kinds of operative surgeries, clinical surgeries, and minor surgeries; of cyclopedias, dictionaries, and most learned and voluminous "systems"—not to mention the multitude of monographs, contributions, and special courses; but in spite of all this embarrassment of riches, what is to be done or has been done for the bewildered tyro—nay, even for the older student, if not for the almost equally puzzled tutor? We fear their wants have not been hitherto provided for in the manner which the experience and sense of either party would lead him to prefer at once, were he so fortunate as to be allowed an opportunity of choosing for himself. There is hardly within the beginner's reach a volume that undertakes to tell him effectually what he ought to learn before he is prepared to grapple with discussions which he has no time at first to profit by. He cannot find one which will afford him, in a condensed but not too meagre form, a clear, methodical, and comprehensive view of the leading facts and principles of surgical pathology (*internal* as well as *external*), diagnosis, prognosis, and treatment, such as he hears, or ought to hear, inculcated in their full length and breadth at the hospital and the lecture-room.

We do not ask for actual *primers*. These, as everybody knows, are sufficiently abundant—thanks to the eagerness with which such labour-saving inventions of the enemy always will be sought for, and which the very lack above expressed of proper substitutes contributes to increase; but we would be pleased to see a greater interest shown by competent authorities in the preparation of what alone can drive the catechisms, *et id omne genus*, out of decent company. Our prayer is for an intelligible, attractive form of introductory or primary class-book, elementary in character, but imparting a thorough general groundwork, and a groundwork only, of the science and art of surgery in its foremost state of progress.

The excellent compendium of Mr. Druitt seems, so far as we can now remember, to be the work which of all others in the English language has most nearly met this want, and which has probably in consequence enjoyed the most encouraging success. The compact form and *omnium gatherum* peculiarities of text and illustration that characterize this book, together always with the really great merit of its general style and teaching, doubtless materially aided in establishing its unprecedented circulation. Still, we are inclined

to attribute some share of the result to the absence of competition from the kind of work we have been trying to describe. For the very fulness of Mr. Druitt's "system," arising from the attempt to treat of everything and to illustrate everything at so small a cost of ink and paper—not to say of effort to the reader—has rendered it, after all, too much the mere *vade mecum* it was originally intended and denominated by its author—a *vade mecum*, moreover, decidedly more useful to the accomplished under-graduate and the practitioner than to the inexperienced learner.

Professor Pirrie does not pretend to address himself to any class of readers, or to place his work in competition with any others of its kind. It was prepared for the use of the members of his class, and in compliance with their wish, repeatedly expressed, to be furnished with a compendium of his lectures. In thus answering their call, it was his "endeavour to combine simplicity of arrangement, and conciseness and clearness of description, with the elucidation of sound principles and practice." A pretty full examination of his pages has led us to believe that he has succeeded admirably in his modest enterprise; at least, so far as he has gone. So admirably in many respects, and so entirely in many portions of his book, does he fulfil our hopes, that we seriously regret that his aim had not been higher in its elaboration for the press. A very little more care and time devoted to a few of the chapters, and to the discussion of a few additional topics in the same able manner that distinguishes the rest, would have freed it from inequalities and omissions which have justly been complained of, and would have rendered it one of the best text-books on its branch, and by all odds the very best *elementary* class-book of the kind we think desirable, in the English language.

The faults of Professor Pirrie have been generally admitted to be for the most part errors of omission only, and hence less detrimental to the value of his compend in the hands of students. Some of these omissions have been very well supplied, as we may show hereafter, by the American editor, who has added a considerable amount of valuable matter, compiled from the best sources in the country. The existence of others of the alleged short-comings may be a question of opinion in which the professor is entitled to the benefit of the doubt. On the whole, therefore, there is so little to object to in the doctrine and arrangement of the work, and so much to approve in it as a lucid elementary exposition of the present state of the principles and practice of surgery, and as a safe and attractive guide to the student of this branch, that we do not hesitate to recommend it warmly to our readers as already the best of its kind yet published. Our hope is that, in the new edition which must soon be called for, its author and editor may take the little trouble that would be required to place it not only in the competition which is now disclaimed, but before all competition with any publication of its class. Meanwhile, we propose to take a rapid glance at the general method and construction of our author, and at his matter here and there, taking occasion to offer by the way some extracts for the better information of our readers in relation to his general style and tone. More than this cursory view we cannot undertake, as any particular discussion of the doctrines of such a work would answer no good purpose, while a lengthened analysis of its contents would carry us beyond our present limits.

The book, then, is divided into twenty-five chapters, each of which is distinct in itself, and occupied with a particular topic or class of diseases. The headings of these chapters will serve to give an idea of the contents as a whole, and may be enumerated in so many words, and in the order of succession adopted by the author. The first ten chapters are devoted respectively

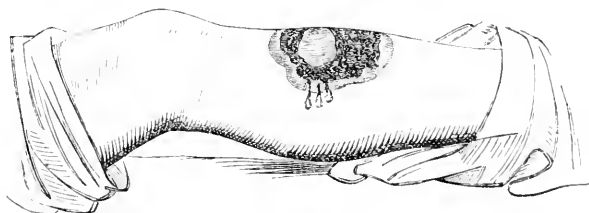
to the consideration of Inflammation and its Results (in 29 pp.); Erythema and Erysipelas (pp. 10½); Wounds (pp. 31, including additions by *Am. Ed.*); Burns (pp. 21); Fractures (pp. 75); Injuries of the Head (pp. 26, including Fractures of Face by *Am. Ed.*); Dislocations (pp. 57); Affections of the Osseous System (pp. 39, including additions by *Am. Ed.*); Diseases of Joints (pp. 34, including Anchylosis and Hysterical Disease of Joints by *Am. Ed.*); and Curvatures of the Spine (pp. 23). The next ten chapters are occupied with Talipes (pp. 18); Affections of the Arteries and Veins (pp. 49); Hernia (pp. 56); Wounds of Abdomen (pp. 6, including Paracentesis Abdominis); Calculous Disorders (pp. 47, including additions by *Am. Ed.*); Affections of the Testicle (pp. 16); Affections of Genito-Urinary Organs (pp. 29); Amputations and Resections (pp. 26); Deligation of Arteries (pp. 16½); and Affections of the Rectum (pp. 8½). The concluding five chapters are designated as follows: Affections of the Eye and its Appendages (pp. 53½, including Strabismus by the *Am. Ed.*); Affections of the Nose (pp. 10, including Rhinoplasties and Affections of the Antrum); Affections of Mouth, Throat, and Windpipe (pp. 32½, together with Wounds of Neck and Chest condensed by *Am. Ed.* from *South's Chelius*); Tumours (pp. 19); and Affections of the Breast (pp. 5½).

We have taken the pains to ascertain the number of pages belonging to each chapter, in order to enable those, who may have the curiosity to note the difference in the amount of attention paid to the different topics, to make their own comparisons. It must be remembered, however, that the estimate can only be approximate on account of the different numbers and sizes of the marginal wood-cuts. Still, it must be confessed that the disproportion is obvious in more than one instance upon the slightest examination. Certain topics are dispatched in a hurried and very unsatisfactory manner, while others are dwelt upon to an extent that would not be expected in such a volume. Inflammation and its Results are crowded into twenty-nine pages, Erythema and Erysipelas into ten and a half, Wounds into thirty-one, and Fractures into thirty-one, while the article on Burns is allowed to take up twenty-one pages, that on Curvatures of the Spine twenty-three, that on Calculous Disorders forty-seven, and that on Talipes eighteen. We do not wish to say that there is one word too much in a single chapter. Some of them are admirable specimens of condensation, and contain extremely useful summaries. But we cannot help thinking that the balance might be better struck in many places, and that an importance has been given to several sections, which more properly belonged to others.

Chapter 1st, on Inflammation and its Results, although enriched with the latest pathological views, and remarkably full, considering its very narrow limits, is disproportionately brief, especially in its history of the Results. In regard to the treatment, it is altogether too deficient. Under the head of Ulceration may be observed six different wood engravings of the leg, intended merely to exhibit the different varieties of ulcer. They are certainly very becoming specimens of zylographic art, but afford too vague an idea of the morbid appearances they are intended to depict to warrant the amount of room thus withdrawn from other objects in their immediate vicinity. We would rather have the roughest kind of a diagram, if it would only convey a definite idea, than the most superior drawing; and under this impression it seems to us that a magnified or exaggerated delineation of the ulcerated surface by itself would answer a better purpose than a larger picture, although this latter might represent a handsome foot and leg. While upon this subject, we are tempted to make our first quotation from page 52, on *granulation*:—

Granulation.—The process by which the cavity is filled up, and continuity of tissue restored, is called granulation; it consists in exudation from the surface of the cavity of blood-plasma, constituting the fluid cytoblastema. Part of this blood-plasma degenerates into pus-corpuscles, but part becomes transformed into nucleated cells. Minute granules, forming the nucleoli (as they are called), are developed, and to the assemblage of these the term nucleus is given. On the nucleus a cell-wall becomes developed, which, at first closely embracing the nucleus, is afterwards raised up from it, and the nucleus thus separated from the cell-wall occupies an eccentric position within it. In these organized products, vessels are formed, and the whole, when thus developed, constitutes a layer of granulations, spreading over the surface of the cavity, and giving it the appearance of being covered with innumerable small bodies of a conical form, and of a florid red colour. From the granulations blood-plasma is exuded, part of which degenerates into purulent matter for the defence of the granulations, and part is transformed into nucleated cells, by which a new layer of granulations is formed. The cells of the first-formed layer undergo further changes, and are ultimately developed into the texture of the part, from the vessels of which the exudation of blood-plasma took place, and each subsequent exudation furnishes a cytoblastema for the formation of purulent matter and nucleated cells. By the successive formation of these cells, by their becoming ultimately developed into permanent tissue, and by the centripetal contraction of the original textures, the cavity is filled up, and the next part of the process is *cicatrizatio*n, or the formation of cicatrix. This usually begins when the granulations arrive on a level with the surrounding skin, when the blood-plasma, hitherto converted partly into pus-corpuscles, and partly into nucleated cells, passes into cells which, by the process of development, are converted into fibres, and constitute the cicatrix. The new skin usually takes its rise from the margins of the old skin; but in some few instances, portions of new skin are seen forming on the surface of the granulations, like little islands, quite remote from the margins. Some have endeavoured to account for this fact by the supposition that the old skin has not been completely destroyed, as we not unfrequently find in burns, and that the isolated portions of new skin spring from the parts not entirely destroyed by the burn or ulceration; but I am convinced by various cases which have come under my own

Fig. 8.



observation, that this explanation is not satisfactory. I shall only refer to one case, that of a young lady, whom I had the opportunity of seeing, together with one of my colleagues in the University. The lady was the subject of phagedenic ulcer, of considerable size and of great depth, in the leg; and as other means had had no effect in arresting the destructive action, the whole surface was destroyed to a considerable depth by pure nitric acid. After the removal of the slough, healthy action took place, and a large isolated portion of the skin formed in the middle, and gradually increased until it joined that formed from the circumference of the ulcer. I have for several years been in the habit of showing to my class in the University, a drawing of this case, as it is an incontrovertible instance of an exception to the ordinary rule of the formation of skin from the circumference only, and an evidence that the explanation mentioned above is not satisfactory."

The same deficiency that was remarked above in regard to Chapter 1st, though not quite so decided, appears in the section on Erysipelas in Chapter 2d. Chapter 3d, on Wounds, although brief, in some respects is capital. We have room only for one extract that may appropriately follow the one already given:—

“Treatment for Granulation.—Wounds may require to be treated for granulation, either when inflammation has proceeded too far in a case which it was first attempted to heal by adhesion, or when, from the beginning, it was evident that granulation was the most suitable mode of healing, whether owing to loss of substance preventing coaptation, or to extensive contusion, or to the presence of foreign matter which could not be removed; all of which conditions are incompatible with the attainment of adhesion, on account of the active inflammation to which they give rise.

“In the former case, that of a wound treated hitherto for adhesion, its edges become swollen, red, and painful. Swelling more deeply seated causes the margins to separate, and purulent matter is soon poured forth. The indication here is to repress inflammation: in fulfilment of which, all sources of local irritation and general stimulation must be withdrawn. Sutures, if present, should be removed, and only a few strips of plaster left, to prevent any unnecessary gaping of the wound, and in many cases they also must be dispensed with. To the parts thus relieved from every kind of local irritation, warm water-dressings are applied, or a light, soft, moist, and warm poultice, if that application be still employed.

“In the second case, where granulation is from the first considered to be the most available mode of cure, the treatment is essentially the same as that mentioned above. The part is elevated, and kept at perfect rest: no sutures are employed, and only a few strips of plaster are used to connect the more loose portions of the wound. Cold water-dressing is applied till oozing of blood ceases; it is then gradually changed to the tepid, and next to the warm dressing, as the vascular action rises, so as to soothe and relax the tumefying wound. When the inflammation proves so active as to threaten gangrene, it must be repressed by local bleeding, and if absolutely necessary, by general depletion, in addition to the antiphlogistic regimen, which, during this stage of acute inflammation, is to be adopted.

“In both cases, the same point is now reached. Warm dressings are continued so long as inflammation remains active; but as it subsides, the heat of the dressing is gradually lowered until it be again merely tepid, or even cool.

“Under this treatment, the surfaces, if matters go on favourably, become clean in a few days; granulations spring up, and healing advances. The discharge which, during the height of the inflammation, had been very profuse, and far from laudable, now diminishes in quantity and improves in quality. In these circumstances, the wound, when superficial and broad rather than narrow and deep, requires merely the treatment proper for an ordinary ulcer; comprising the water-dressing, medicated, when necessary, with metallic salts, to stimulate indolent granulations, and the employment of carefully-adapted pressure by a bandage, when necessary to repress oedematous swelling.

“But if the wound be deep, without much loss of substance—in fact, such a case as would have healed by adhesion had not inflammation prevented—then, at this stage, when the surfaces are granulating well, and secreting little pus, they will, if placed in mutual contact, speedily cohere, affording a most satisfactory and rapid cure by secondary adhesion. Plasters are employed to retain the parts in apposition, and a bandage, lightly and uniformly applied, is in general necessary to give support. As absolute local rest is necessary for healing, any neighbouring joint, which interferes with this essential condition in the wound, must be prevented from exercising its natural functions, by a splint fastened with a few turns of a roller, or with a buckle bandage applied at two or more points, lightly, so that no oedema may ensue on the distal aspect, and arranged so that neither splint nor bandage shall compress the injured parts, or come in the way of the requisite dressings. Cleanliness is throughout attended to; the actual edges of the wound are not touched, but

from all around them the discharge is frequently wiped away with a small dosil of clean lint, tow, or rag, or indeed of anything clean, soft, and absorbent. A good sponge answers well when there is only one wound to dress, because it can then be frequently washed; but, in hospital practice, it would come into contact with all kinds of sores, and would never be sufficiently well or often cleansed after each time of its employment. On the other hand, the morsel of tow, being of small value, may be destroyed, and a fresh piece employed on each occasion."

Chapter 4th, on Burns, as already intimated, is admirable. It is evidently written *con amore*, and with no ordinary hand. There is no part of it that would not create a favourable impression. We must leave it with one quotation:—

"The *Constitutional Treatment of Burns* comprises *five* indications: namely, to promote reaction: to control and regulate its intensity; to watch for and treat inflammatory affections of the internal organs; to support the system under hectic and its complications; and lastly, to remove mechanically, under certain circumstances, the cause of the hectic.

"The *first* indication, then, of general treatment is to promote reaction. It is said that reaction is mainly brought about by the severity of the pain; but this must only be when the pain is under a certain degree of intensity; for it is well known that this symptom, when excessively severe, itself exercises a powerfully depressing influence upon the heart's action. In many cases, nature is able herself to rouse the system; but if not, reaction is to be promoted, when the patient can swallow, by the administration of some of the diffusible or more permanent stimuli, such as ammonia and brandy, in small and frequently-repeated doses. When the general surface and the extremities are cold, warmth should be applied, and, if practicable, sinapisms to the feet and pit of the stomach: but the effect of these must be closely watched, lest they induce sloughing. Opium has been recommended in large doses, to diminish the pain, but this will tend to increase still further the cerebral congestion, which dissection has proved to be so common at this stage; while, on the other hand, small doses will have no effect. The pain should in these cases be relieved, as far as possible, chiefly by topical remedies. When the collapse remains long, a warm and slightly stimulant enema may be administered, and repeated if necessary.

"This stimulant treatment, during collapse, must not, however, be carried too far; and it is to be suspended so soon as signs of approaching reaction appear; for otherwise, when that stage is fairly established, the persistent effects of a superabundant stimulation, or, in other words, its surplus would exaggerate the reaction, which would now require as active treatment in the opposite direction, and when subdued, if indeed not fatal, the system would be much more enfeebled than it would necessarily have been, had nature been left a little more to her own resources during her efforts to institute reaction.

"When, as stated before, premature and asthenic reaction comes on, marked by great irritability and nervous excitement, with a rapid, throbbing, but feeble pulse, the exhibition of opium, in large doses, is attended with the most beneficial results.

"The *second* indication is to regulate the intensity of the reaction. When it proves excessive, without apparently any internal organ in particular being attacked, the antiphlogistic regimen will in general be sufficient. In very few burns is bloodletting in any form required, or, indeed, in hospital practice, admissible; but it may possibly be demanded, in a few cases, to relieve the general inflammatory state of the system; and, at the same time, to moderate the local action, and thus limit the amount of secondary sloughing. In having recourse to these depletive measures, however, it must never be forgotten that, in all burns, except those of the first and second degrees, the powers of the system may, at no distant day, be taxed to their utmost to support suppuration, perhaps large in quantity, prolonged in duration, and secreted by an extensive surface. Accordingly, the slightest unnecessary lowering of the system will entail a still more profuse and protracted suppuration—a still more tedious and possibly imperfect cicatrization.

"The *third* indication relates to the inflammatory affections of various organs which may occur. Their onset is often very insidious, and so must be watched for. They are to be treated in accordance with the ordinary medical principles applicable to each particular complication. Bloodletting, when necessary, should be as moderate as possible, for the reason already specified; and also on account of the well-established principle, that depletion cannot be borne to the same extent in secondary inflammations, after a shock or injury, as in a primary or idiopathic affection of the same nature.

"The *fourth* indication is to support the system against hectic, and its complications. The appropriate treatment has been described when speaking of Hectic Fever. Over-stimulation must be guarded against, as this, equally with debility, impedes cicatrization by inducing flabby and exuberant granulation. The bed-sores, resulting from long-continued pressure on the salient points of the back, sacrum, nates, and heels, exercise a very depressing effect. When threatened, a strong spirit-lotion is an excellent application; or, if already formed, the part may be pencilled with nitrate of silver. Under the crust thus produced, the part, if relieved from further pressure, will readily heal. Arnott's water-bed, or a Mackintosh air-cushion, affords great relief by equalizing the pressure over the whole decumbent surface.

"The *fifth* indication is to remove mechanically, when necessary, the cause of the hectic. Amputation, though frequently performed to fulfil a merely local indication, namely, the removal of a useless limb, is sometimes necessary for the sake of the constitution. Thus, if hectic be extremely urgent, the suppuration continuing very profuse, with a large surface still remaining for cicatrization, while the amount of the former is not satisfactorily diminished, nor the rapidity of the latter materially increased by remedies, then amputation must be performed in order to save life.

"Suppuration may be prolonged, and cicatrization delayed—from debility of system—from an extensive surface being involved—from bone having become necrosed—and from the opening of a large articulation, either by the sloughing of the tissues, or subsequent to inflammation and abscess in its interior."

In relation to Chapter 5th, on Fractures, we may say that the introductory section is entirely too brief, and the whole chapter, with the exception of the section on fracture of the femur, is unsatisfactory and defective. Several important fractures receive no notice whatever, whilst others are passed over with very little mention. The history and treatment of the fractures which he does take the time to discuss, however, are, like other matters in the book, almost invariably well done. His mode of tabulating the varieties of fracture, and the different indications for treatment, strikes us as especially convenient. We are glad to see that Dr. Neill has introduced a note and drawing of Dr. Bond's recently introduced splint for Barton's fracture, and one of Fox's apparatus for fractured clavicle. Of the remaining chapters the best are—the 6th, on Injuries of the Head; the 8th, on Affections of the Osseous System; 9th, on Diseases of the Joints; 10th, on Curvatures of the Spine; 12th, on Affections of the Arteries and Veins; 13th, on Hernia; and perhaps the 15th, on Calculous Disorders.

Chapter 6th, on Injuries of the Head, is judiciously and ably written, and bears internal evidence not only of decided erudition, but ample practical experience.

Chapter 8th, on Affections of the Osseous System, is an instructive and extremely interesting chapter, in which the author again appears on evidently favourite ground. Next, we have an excellent chapter on Diseases of the Joints, and following this another, on Curvatures of the Spine, that would do honour to any of the systematic works. That on Diseases of the Joints is a remarkable history of the present state of knowledge of those intricate affections. Its illustrations are among the most curious and valuable in the whole book. The chapter on Talipes is clear and well digested, and full

enough to bear its due proportion to the other parts. Chapters 12th and 13th, succeeding this, on Diseases of the Arteries and Veins and on Hernia, respectively, are two of the most valuable and instructive chapters in the book. The extracts here appended from the former will interest the reader, and may serve as fair examples of the manner in which its subject has been dealt with. First, let us read his sketch of

“**STEATOMATOUS DEGENERATION.**—This disease, named less properly by some atheromatous degeneration, was long overlooked, and seems to have been first noticed by Monro and Haller; but since they drew attention to it, it has been investigated with great success by many able pathologists, and its anatomical characters and progress distinctly pointed out. Steatomatous degeneration commences by minute granules, of a pale yellowish colour, situated between the internal and middle coats. While the disease is in this rudimentary state, the lining membrane is scarcely elevated at all; it is transparent, so that the spots are seen through it; it is unchanged in consistence; and if it be peeled off, the granules being adherent to its surface, come along with it. There is no accompanying redness, or any mark of inflammatory action in the surrounding textures. These granules coalesce into groups or masses, in the next grade of the degeneration, and the inner membrane, though unchanged as to transparency or texture, is scarcely so flat as during the early stage; and if it be peeled off, part of the deposit comes away with it, and part clings to the middle coat, from which it appears obvious that the unnatural deposit is developed between them. The middle coat, at the seat of the deposit, is of a light yellow colour, and of a more friable texture than natural, but neither in it nor in the surrounding textures can traces of inflammatory action be at this stage discovered. The deposit has the consistence of suet—feels greasy to the touch—is of a cheese-like opaque appearance, and when broken down by the finger, gives the sensation of minute granules scattered through a fatty substance. Not only has it a fatty appearance, but the researches of Gulliver show that its chemical composition also differs but little from that of ordinary fat; and this being the case, of the two appellations, steatomatous and atheromatous degeneration, the former is the more correct. Bizot detected shining particles in this deposit: Cruveilhier, small masses resembling the cholesterol scales of small gall-stones. Gluge, on examining these masses with the microscope, found them to consist of fat-globules; and Sivaine, who also repeatedly examined them with the microscope, states that he ‘found them, on several occasions, to consist of fat-globules merely; generally, however, they were made up of an amorphous granular mass, mingled partly with fat-drops, partly with numerous cholesterol rhomboids. The shining particles are often very numerous, some having a golden, and some a silvery hue.’

Fig. 134.



“The steatomatous degeneration, after attaining the grade last described, may undergo one or other of various transformations; the two principal changes, however, are ulcerous softening and osseous transformation. For the sake of a clearer description, the various changes in ulcerous softening have been arranged into three stages.

“The first is characterized by the absence of all marks of inflammation in the surrounding textures, or of any change in colour, transparency, or consistency of the internal membrane. This membrane, however, is slightly elevated, there being more of the deposit than in the former grades of the disease; and the middle coat is still more altered and softened, and of a still brighter yellow colour at the affected spot. In the second stage, the patches are distinctly elevated, like pustules, and when pressed, communicate to the finger of the examiner the

Fig. 134. From a preparation in my museum.

impression of their containing a semi-fluid substance. After the membrane has been opened and the matter discharged, it is found, on examining the place in which the matter was contained, that the middle coat presents an ulcerated appearance; but some part of it still remains between the place in which the matter was situated, and the outer coat. In the third stage, the internal membrane having cracked allows an escape of the deposit, and falls down towards the middle coat, producing a depression; or the internal membrane having (as happens in many instances) fallen off, or having disappeared, an ulcer is formed, with the walls of which the sanguineous current is in contact, the edges being irregular, and the walls formed of the outer coat, or of that and the yellowish detritus of some very small portion of the middle coat. The outer coat becomes thickened, and the seat of many injected vessels, but no traces of inflammation are to be seen in the inner and middle coats at the parts surrounding the seat of the degeneration. Such are the characters of the steatomatous degeneration, when it undergoes the ulcerous transformation; but, as has been stated above, it may undergo an opposite change, termed the osseous transformation. The term transformation has been objected to, when applied to this last-mentioned change, as the calcareous matter is merely deposited in the yellow steatomatous substance, which is regarded by many pathologists as forming its nidus. The calcareous matter assumes the form of thin, brittle scales or plates, of a yellowish-white colour, surrounded at first by steatomatous deposit, but not having any fibres or organized structures between them. They are believed to increase very slowly, the surface directed to the lining membrane more slowly than that directed outwards; and they evidently enlarge more in extent than in thickness. As the calcareous deposit increases, it comes into contact with the lining membrane, from which it is in some instances separated up to this period by a layer of albuminous matter spread over it. The inner membrane in many cases at length gives way, so that the blood is in immediate contact with the calcareous deposit, and the middle coat, after having been attenuated and changed as already described, ultimately disappears, and its place may be said to be occupied by the concretion; hence has arisen the erroneous opinion that this coat itself is transformed into bone. The calcareous concretions are found in various forms; they usually consist of plates or scales, varying considerably in extent, and, in some rare instances, occupying the whole circumference of the vessel at the affected part, so as to convert it into an inflexible tube. Sometimes they consist of minute grains; and more rarely, they give, on examination with the finger, the sensation of a number of minute bodies, movable on each

Fig. 135.



Fig. 135. From a preparation in my museum.

other, as if jointed together. As cartilaginous degeneration of the inner coat is not very unfrequently found coexisting with the form of calcareous transformation just described, the error of ascribing the calcareous deposit to ossification of the previously-existing cartilage is easily accounted for. These subjects of anatomico-pathological investigation have occupied the attention of many pathologists, and in the present state of our knowledge of them, they are considered, not as different stages of the same disease, but as entirely different diseases—the result of different morbid actions; the one commencing on the free surface of the internal coat, the other in the cellular tissue between the internal and middle membranes. Such are the anatomical characters of the ulcerous and calcareous transformations; the latter, however, may give rise to ulceration, and it may therefore be stated, that, in the progress of steatomatous degeneration, ulcerous transformation may take place, with or without osseous transformation. Sometimes when the steatomatous deposit exists in great quantity, it diminishes the channel of the artery, but it is much more frequently productive of dilatation with or without ulceration, or of rupture, or of circumscribed or diffuse false aneurism—dilatation being usually the result of the steatomatous deposit, and rupture with its consequences, of that condition when accompanied by calcareous concretion. A variety of the steatomatous deposit has been described by Scarpa, Stentz, Craigie, and others, in which the secretion is of a yellowish colour, and of a cheesy or wax-like consistency. It commences most frequently in the bifurcations of arteries, and originates between the middle and inner coats; but it differs from the deposit already described, in being of firmer consistence, and in rarely containing gritty calcareous deposition. To this variety some restrict the term steatomatous degeneration, and give to that already described the name of atheromatous deposit."

Next we may turn to the history of aneurisms, and particularly to their

"Spontaneous Cure.—Nature sometimes, though very rarely, effects a cure; and an aneurism, therefore, which is not accessible to surgical treatment, does not invariably terminate fatally. The processes by which a spontaneous cure may be effected are the following:—

"First.—The most frequent manner of a spontaneous cure is, by the sac becoming filled with lamellated coagulum. The various stages of this mode of favourable termination, first minutely described by Hodgson, and afterwards minutely investigated by many other competent observers, are the following: the sac becomes completely filled so as to preclude all further entrance of blood. The artery, by deposition of coagulum, becomes impervious as far as its nearest considerable branches, and is ultimately converted into a small impervious cord—the circulation in such cases being maintained by the blood, which is received into the branches given off from the arterial trunk above the aneurism, being discharged into branches given off from the trunks below, and conveyed through the last-mentioned branches by inverted circulation into the trunks from which they originate—both sets of branches becoming much enlarged. Or the artery may remain pervious, the blood passing over the closed-up sac at the part where its mouth communicated with the vessel. The tumour becomes smaller and harder in consequence of absorption. Petit records a case of spontaneous cure in which the aneurism, at one time as large as an apple, became as small as an olive. Examples of this mode of spontaneous cure are to be found in the writings of most surgical authorities on this subject. The accompanying drawing is taken from a very good example in my own collection of preparations.

"Second.—In some examples where the whole circumference of a vessel has become aneurismal, a spontaneous cure has been effected by a canal being left through the centre of the lamellated coagulum, through which the blood continued to circulate. There is reason to believe this to be an extremely rare mode of spontaneous cure.

"Third.—It occasionally happens that from over-distension, or some other circumstance, inflammation of the sac and surrounding parts supervenes, and goes on to gangrene, the whole of the aneurismal tumour sloughing away, and by that means a spontaneous cure is effected; hemorrhage from the vessels

leading to the part being prevented by the same process as when gangrene takes place in other circumstances.

"*Fourth.*—Another mode is by the aneurism pressing on the trunk leading to or from the aneurism, so as to obstruct the circulation. If the size and position of the tumour be such as to cause an approximation of the opposite sides of the artery either on the cardiac or capillary side, there can be no doubt that a cure will be the result. When the pressure is on the cardiac side, the cure is effected on the same principle as in one of the modes of surgical treatment described in the next section.

"*Fifth.*—Pressure on the trunk leading to the aneurism may be produced by other causes than the aneurism itself, as by a tumour not aneurismal, or by another aneurism on a neighbouring artery; and thus a spontaneous cure may result. Mr. Liston records an example of subclavian aneurism, which on dissection was found to have been cured by an aneurism of the arteria innominata.

"*Sixth.*—The same favourable result will follow, when inflammation takes place in the artery, and fills its caliber with coagulum.

"*Seventh.*—Sometimes a portion of lamellated fibrinous coagulum, becoming detached, falls into the sac, and thus causes diminution, or complete occlusion of the mouth. In the latter case, coagulation of the blood in the sac must take place, and in the former the consequent diminution of the circulation through the sac is much calculated to promote deposition of fibrin, and to accomplish a spontaneous cure. In this mode the artery may or may not become impervious.

"*Eighth.*—A portion of the coagulum may fall into the artery and obstruct it; thus effecting a cure. Or,

"*Ninth.*—The aneurism may burst and become diffuse. If the presence of the diffusely infiltrated blood do not give rise to the untoward consequences formerly described, it may, by its pressure on the cardiac side of the tumour, so weaken the force of the circulation through the aneurism, as to promote the deposition of lamellated coagulum, or to arrest the circulation of the fluid parts of the contents of the sac, and thus promote their coagulation. Such are the methods by which nature sometimes, though rarely, effects a spontaneous cure; and it may be a consolation to patients who are subjects of aneurisms in accessible situations to know that their case is not hopeless, and that a spontaneous cure is not impossible."

We begin the examination of the article on Hernia, with a passage descriptive of the use and *modus operandi* of the truss, taken from the paragraphs relating to the treatment.

"I. THE DIFFERENT WAYS IN WHICH THE USE OF A TRUSS PRODUCES A COMPLETE OR RADICAL CURE OF HERNIA.—*First.* If a hernia has been very suddenly produced, if it be very small, and if it be very quickly returned, the hernial sac may either return with the hernia, or be gradually drawn back into the cavity of the abdomen. The sac being empty, and no force pressing it downwards, its ascent will be promoted by the elasticity of the peritoneum lining the walls

Fig. 142.

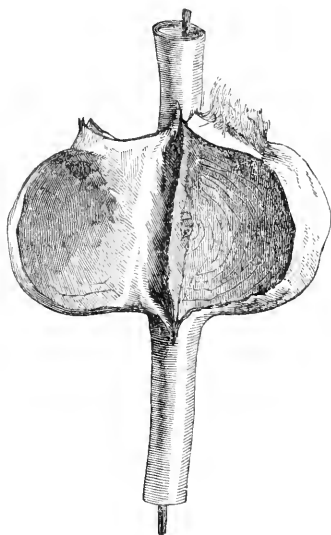


Fig. 142. Spontaneous cure of aneurism of the femoral artery by the sac being filled with coagulum; the vessel remaining pervious. From a preparation in my museum.

of the abdomen in the neighbourhood of the protrusion, and by the stretching of the peritoneum in various movements of the body, as well as by the elasticity of the hernial sac itself. After the return of the sac, the pressure of a truss sometimes produces sufficient diminution of the opening by contraction, effusion of lymph, and consequent joining of the surfaces, to prevent any future protrusion of sac or hernia. This kind of cure, however, in which the sac returns, and its future protrusion is prevented by the diminution of the opening, is only to be looked for in small herniæ of short standing, and very suddenly produced. If a hernia be of considerable size, and more especially if it be also of long standing, the distension of the hernial sac, and the pressure of the surrounding parts, excite a degree of inflammation by which those parts and the sac become adherent to each other, so that the sac cannot be returned into the abdomen, and the kind of complete cure already described cannot take place.

Second.—After the return of a hernia, the sac, being empty, contracts by its own elasticity, in accordance with the general law that membranous parts accommodate themselves to the state of their contents. This kind of closure of the hernial sac is analogous to the contraction of the tubular portion of peritoneum, which exists within the inguinal canal for some time after the descent of the testicle. A truss, by approximating to each other the sides of the hernial sac, may assist the natural elasticity in closing up its neck, and in bringing about a radical cure.

Third.—Occasionally, the wearing of a truss for a long time produces thickening of the neck of the sac, or of the cellular tissue surrounding it, or of both, and thus interrupts the communication between the cavities and the abdomen, and the hernial sac.

Fourth.—The pressure of a truss often excites adhesive inflammation in the sac, by which its opposite sides become joined together by coagulable lymph, and a recurrence of hernia is prevented. This condition of parts is very frequently found in the bodies of persons who have been subjects of hernia.

Fifth.—According to J. Cloquet, the opposite sides of the sac sometimes become adherent without the intervention of lymph, and without the very slightest traces of any inflammation. He supposes that the membrane ceases to secrete the fluid by which it is naturally bedewed; that it becomes dry, and that the sides become adherent without the intervention of any substance. In the ordinary form of adhesion of the opposite sides of a hernial sac, effusion of lymph, thickening of the sac, and traces of adhesive inflammation are perceptible; whereas in this method of complete cure there is immediate union, with thinning of the peritoneum, and the entire absence of all traces of inflammatory adhesion.

Sixth.—Paré, Arnaud, and others, record cases in which complete cures were effected by the firm adhesion of the formerly protruded parts to the peritoneum lining the abdomen around the mouth of the hernial sac; and as in these cases trusses had been worn, it was believed that the pressure gave rise to inflammation in the neck of the sac, and that this inflammation, having extended to the membrane lining the cavity of the abdomen, produced the adhesions.

Seventh.—Absorption of the neck and part of the body of the sac sometimes produces radical cure. Surgical observers have described this condition of parts, and I lately had an opportunity of demonstrating it to the students at the School of Medicine in Marischal College, in the body of a person who had worn a truss for many years for the cure of a reducible hernia. Almost the whole of the neck and the upper part of the body of the sac were absorbed, but the remaining portion of its body and fundus were entire, and formed a bag in the scrotum in front of the tunica vaginalis.

“II. THE PRECISE SITUATION TO WHICH THE TRUSS SHOULD BE APPLIED.—Since the immediate object which the surgeon desires to accomplish by the pressure of the truss is, to prevent a return of the hernia, and the ultimate object, to induce some of the various changes already described, by which the tendency to its recurrence may be removed, it must be evident that the precise part to which the pressure should be applied is, that where the hernia first quits the abdomen. This point will vary in the different forms of hernia, and

will afterwards be explained; but meanwhile it may be stated that before the various changes in the sac, and in the opening by which it quits the abdomen, were clearly understood, by which changes a complete cure of hernia is effected, a very common error which prevailed was, to apply the truss too low instead of exactly over the opening; and in consequence, the advantages of the truss were often not obtained, and, moreover, various inconveniences, which will hereafter be described, were frequently produced.

“III. THE LENGTH OF TIME A TRUSS SHOULD BE WORN.—As the prospect of a complete cure is very different at the different periods of life, it being almost a matter of certainty in young persons, occasionally met with in adults, and not to be expected in elderly persons, there will be a corresponding difference in the length of time that the truss must be worn, as well as in the object of wearing it; the object being at one period merely preventive or palliative treatment, at others palliative treatment and radical cure. In young persons, a complete cure is often effected in less than twelve months, in adults seldom under two years at least, and in old persons it is not to be expected. In regard to the time a truss should be worn, Sir Astley Cooper remarks: ‘You will be asked by the patient when you have applied the truss, how long he is to wear it; tell him to wear it at least two years. He will then ask you whether he is likely to be cured at the end of that time; your answer must be that this must depend upon his age. A young person is generally cured at the end of two years, but it will be advisable for him to continue to use the truss for three years. If the person be not young, there is not much hope of effecting the cure of hernia by wearing a truss.’

“The truss should be constantly worn, not only during the day, but also during the night, because, although the probability of a recurrence of the hernia is by no means great in the recumbent posture, yet it might be induced by a cough, or any sudden change in the posture of the body in bed, and then the cure would require to be commenced anew from that period. It ought also to be kept in mind that the recurrence of the hernia, after the use of the truss has been commenced, is attended with more risk than before, because if thickening about the neck of the sac or around it has commenced, the hernia is more likely to be irreducible from being surrounded by firmer textures. According to some of the best surgical authorities upon this subject, the only exceptions that should be made to the constant use of the truss are, when it is first applied, and before it is to be laid aside, when it is believed that a complete cure has been effected. When first applied, the truss frequently gives rise to irritation, and heat of the skin, with inconvenience and discomfort from pressure and restraint; and until these unpleasant sensations wear off, which will usually be in a week or two, it may be discontinued during the night, but the patient should even then be careful not to remove it until he is in the horizontal posture, and he ought again to apply it before raising himself from that position. And when it is believed that the cure is complete, the truss may be discontinued at night, before it is entirely laid aside. For some time after the daily use of the truss is discontinued, it is a judicious precaution to wear it whenever the body is more than usually relaxed. When the danger of a recurrence of the hernia is greater, or during any unusual exertion, and during the whole period of wearing the truss, it is proper, on making any violent movement or effort, to afford a degree of support by the hand over the pad of the truss. When it is believed that the cure is complete, the surgeon should make a very careful examination of the part where the hernia came out from the abdomen; and before he sanctions the discontinuance of the truss, he should endeavour to ascertain that no swelling can be felt, and that during coughing, or any exertion of the muscles of the abdomen, there is no sensation of a hernia striking against the finger when applied to the opening.”

We quote these passages because of their decided testimony in behalf of the possibility of radical cure by means of trusses—a possibility sustained by every surgeon entitled to authority, and of which our own experience has long since convinced us beyond the shadow of a doubt.

It would give us pleasure to present his discussion of the question of open-

ing the sac, which he seems to have studied with unusual care, and has managed to exhibit in a clear and instructive light. Our narrowing space, however, restricts us to a quotation—this time in relation to the abuse of taxis. The important lesson here conveyed cannot be too early or too forcibly impressed upon the learner's memory. And, accordingly, Prof. Pirrie's earnest warnings will be found to bear the stamp of his practised judgment and eminently cautious mind, whilst they are supported by the authority of the ablest surgeons of the day.

"There can be no doubt that intestinal inflammation is the most frequent cause of death after the operation for strangulated hernia. Some of the advocates of Petit's method have assigned as the causes of that inflammation, when the ordinary proceeding is adopted, the exposure of the intestine to light and air, change of temperature, and handling. I agree with Mr. Lawrence in ascribing it not to these agents, but chiefly to the long-continued pressure of the stricture, owing to the operation being *too long delayed*, and to an injudicious and *too frequent use of the taxis* previous to the operation. I remember being very much struck with an observation of Desault's; I have not his words beside me at present, but it is to this effect: 'Think well of that hernia which has been little handled and soon operated on.' The operation is justifiable and necessary, when the patient has been brought fully under the influence of chloroform, and the taxis has been fairly, fully, and skilfully tried, without producing the desired effect. The conviction being thus produced, that by no other means than an operation is there hope of saving the life of the patient, it ought to be resorted to as quickly as possible. Much handling must not only give unnecessary pain, but also increase the risk of hurrying on the inflammation to results which, even though the operation should be performed, would render it unsafe to return the hernia. When, therefore, the taxis has been fairly and skilfully tried on a patient fully under the influence of chloroform, no advantage can, but considerable injury may, result from the repetition of treatment already found to be unavailing. Many considerations show that the operation should be performed as soon as possible after its inevitable necessity has been found to exist. Delay, like undue handling, increases the risk of inducing such a state of the hernia, in consequence of inflammation, as would render its return unsafe. From the circumstance that a hernia may speedily prove fatal, and from the depressed state which comes on in consequence of delay, rendering the patient less able to stand the shock of an operation, will be seen the importance of being as prompt as possible; but there is another, and a very urgent reason, namely, that, if the operation be delayed until intestinal inflammation has been induced within the abdomen, it is far from certain that this inflammation will subside on the removal of the hernia which caused it. I have performed the operation for strangulated hernia, according to the usual mode, a considerable number of times, I believe twenty-three in all, and except in one case, where death occurred in consequence of an attack of phlegmonous erysipelas, which commenced after the patient was considered out of all danger, in every instance with success. This success I attribute to two things, namely, avoiding all undue and useless handling, and performing the operation early. My decided impression is, that the reason why the operation is so frequently followed by death, instead of being one of the most successful of the great operations of surgery, is too great delay in resorting to an operation, and the undue and the injurious use of the taxis, even after its adoption has proved unavailing."

But little room is left us for the remaining sections of the volume. Enough has already been submitted to enable any one to form a pretty fair estimate of the general nature and value of its contents. For aught else we must refer inquirers to the book itself, confident that they could not do a wiser thing than to make it for a while their close companion on the study table. A few words of comment more, and we have done. Among the ten concluding chapters may be found an excellent review of calculous disorders in Chapter

15th, which, although previously pretty full for such a text-book, has been considerably enriched through the good offices of Dr. Neill, who has availed himself, to an excellent purpose, of the admirable materials of Dr. Gross. Chapter 17th is deficient in several topics which are too decidedly important to be slurred over or omitted altogether. Nothing, for instance, is said about spasmodic stricture, the pathology of which has been so beautifully and ably demonstrated by Mr. Hancock in his *Lettsomian Lectures*. Nor is much more to be found concerning retention of urine, from any cause, whether stricture, abscess of perineum, rupture or injury of the perineum, enlarged prostate or other of the different local dyscrasies and displacements. These surely are matters of vital moment to practitioner and patient. In fact, there is hardly a class of ills which flesh is heir to that will more certainly fall to the lot of the young surgeon in his practice than these frequently most terrible affections.

Chapter 18th introduces us to Amputations and Resections, respecting which we have only two remarks to make. It is a curious fact that the circular method of amputation, preferred in the great majority of cases in this country, and, if we mistake not, by army surgeons everywhere, is never once alluded to. It seems, under the influence of local prejudices, to have been so completely banished as to be lost sight of altogether; whilst, more oddly still, its absence has escaped even the sharp eye of the American editor.

Our next remark concerns the use of chloroform, in relation to which our editorial friend has, we think, been again at fault. Chloroform appears to be a standing dish—a uniform preliminary and leading measure, not only in amputations and resections, but in dislocations, fractures, strangulated hernias, and retentions of urine also, if not, in short, in nearly all pain-creating manipulations. This resort to anæsthesia by chloroform we know to be the tendency at present ruling among the British surgeons, and above all the Scotch; but it is not so inordinately the practice and feeling amongst us in this country, at least in Philadelphia. We have little fear of anæsthetics, chloroform excepted, and no one is more ready than ourselves to resort to them on proper occasions and with due precautions, for the purpose of relaxing spasm, assuaging the pain of disease, or blunting the agony from operations; but we do not consider this employment of so powerful an agent for good or evil to be a mere matter of routine too simple and trifling in itself to demand the labour of special caution and instruction. Chloroform, at all events, is manifestly nowhere the harmless instrument it might be supposed to be in Mr. Pirrie's cavalier prescriptions of it. Least of all is it reliable in this country, where the article itself may vary in character and poisonous constituents with every laboratory from which it comes, and must in any case, however pure itself, become, in the hands of an ignorant or careless operator, a source of serious injury and danger. There is good reason, therefore, for the regret that neither the author nor editor has thought of giving some definite advice as to its effectual and legitimate uses, or of entering a caveat against its indiscriminate employment by inexperienced or ignorant hands.

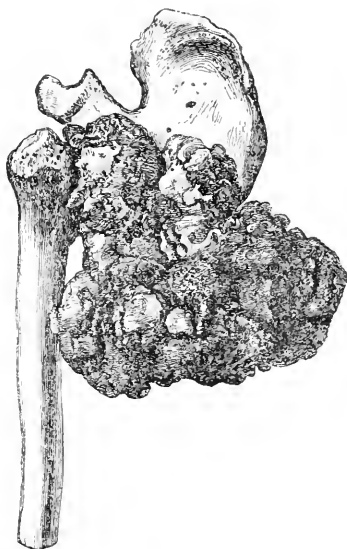
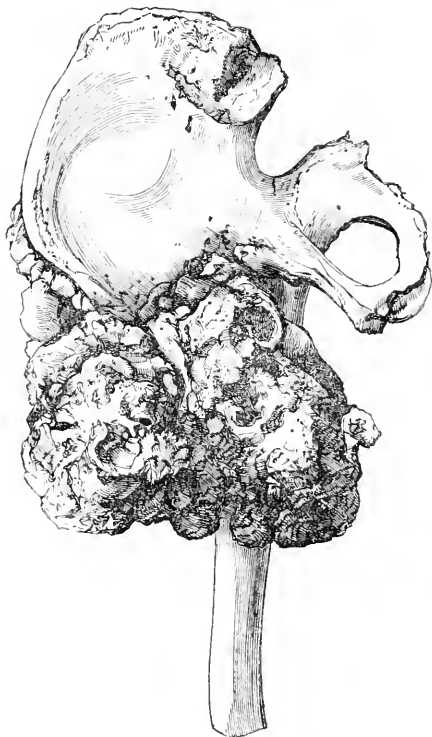
The remainder of the volume is taken up with a very good *resumé* of diseases of the eye; with another still better, although briefer, summary of tumours, especially in their histological connections; and finally with some other less interesting topics, upon which we have no time to dwell.

We present an extract from the chapter on Tumours, containing a brief description of cancellous osseous tumours, with a view more particularly to exhibit the two beautiful illustrations drawn from a specimen in the author's own collection:—

"Cancellous bony tumours are generally more or less round in form ; though somewhat smooth upon the surface, more frequently present numerous lobes and nodules. They are slow in their growth, but often attain a great size. Mr. Paget mentions that the largest he has had an opportunity of seeing is in the Museum of the Royal College of Surgeons of England. It surrounds the upper two-thirds of the tibia ; and measures a yard in circumference. The largest I have seen is one in my own collection, of which the two accompanying figures are good delineations :—

Fig. 288. Front view.

Fig. 289. Back view.



"It is an immense mass of bone attached to the os innominatum, cancellous in its interior, nodulated on its surface, and covered by a thin layer of compact bone. The patient laboured under the disease for ten years, and died in consequence of the sloughing of the soft parts. As the osseous tumour was uncombined with other elements, it cannot be said to be an example of osteosarcoma, under which appellation many include all tumours in which bone is mingled with soft tissue. The viscera were perfectly healthy."

So much for Dr. Neill's edition of Mr. Pirrie's *Elements of Surgery*.

The publishers have done their part so handsomely that, with the aid of the editor's additional text and illustrations, they have really produced a better book than the original. The paper, printing, and engraving are all of the very first class, and entirely worthy of the high position which the work is destined to assume. That an opportunity for the much more material improvement that awaits it may very soon present itself in the call for a new edition is our earnest hope and expectation.

E. H.

BIBLIOGRAPHICAL NOTICES.

ART. XXIV.—*A Treatise on the Practice of Medicine.* By GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc. etc. 2 vols. 8vo. pp. 847, 853. Philadelphia, Lippincott, Grambo, & Co. 1852.

THE complaint is often made that no encouragement is extended to the works of our own physicians, while medical works emanating from the British press command a larger sale in this country than they do at home. We are not aware, however, that any production of merit from the pen of an American physician, adapted to the wants of the profession in this country, has failed to meet with all the encouragement that could reasonably be anticipated. If we had no other evidence that the physicians of the United States are neither disposed to undervalue the productions of their own countrymen, nor to forego their purchase when they ascertain that such productions are of a character calculated to impart to them instruction of immediate practical application, the success of the treatise before us would fully sustain the truth of the position. The sale of two editions, the second being double the size of the first, within five years, is a very certain proof of the acceptability of the work with the American medical public, as well as of their disposition to sustain a native medical production when suited to their wants.

We believe that we are warranted in affirming that the works of our own physicians when even of a more expensive character, and which less immediately minister to the everyday exigencies of the American practitioner, than the treatise of Dr. Wood, by no means lack encouragement, but obtain as ready a sale in this country as do the same class of works by European authors, and, in extent, not very far short of what these latter command at home.

It is unnecessary for us to enter at this time into an examination of the manner in which Dr. Wood has executed the task he has assumed—the preparation of a complete treatise on the practice of medicine. A somewhat extended review of the first edition was presented soon after its appearance; since then the work has reached and received the approval of a large portion of the profession throughout the Union, by whom it is now made use of as a work for constant reference; and we know of no one to which the student and the practitioner may resort with greater certainty of obtaining correct views of the pathology of diseases and of the treatment which present experience approves as that best adapted for their removal.

The teaching of Dr. Wood in regard to the seat, pathognomony, and nature of diseases, and their proper management, is based upon the recorded observations and experience as well of the physicians of the United States as of those of Europe, compared with his own, in every case in which an opportunity has been afforded him for the study of the maladies of which he treats. He has gathered from every attainable source the knowledge which he deems important. These materials have, for the most part, been maturely considered, have been submitted to a close scrutiny, and have been rearranged in a manner calculated to combine conciseness with clearness and precision.

The great aim of the author has evidently been to present an honest exposition of the present condition of our knowledge in regard to the pathology and therapeutics of the leading diseases to which the human body is liable; and in carrying out his plan we nowhere detect him sacrificing truth in a search for novelty, or disregarding the obvious deductions from well-established truths in the desire to build up some specious hypothesis.

It is this which renders the treatise before us so safe a guide to the inexpe-

rienced—so valuable a reference for those engaged in the active duties of the profession, without time or opportunity for keeping pace, by the perusal of many books and the close analysis of their contents, with the daily progress which everything connected with the healing art is now making through the labours of its cultivators both at home and abroad.

The call for a second and a third edition has been improved by the author to bring up the work fully to the actual state of medical knowledge. In the edition just issued, it has undergone many modifications, and not a few important additions have been made to it.

“Among the additions may be mentioned brief notices of several diseases, which, from their rarity, or total absence in this country, or from being yet unknown as distinct affections, were not described in the former editions. Such are the relapsing fever of Dr. Jenner, the leucocythemia of Professor Bennet, the dengue, and certain cutaneous affections, as trichosis, lupus, and pellagra. The chief modifications, however, have reference to subjects, previously more or less fully discussed, as, for example, to inflammation, fatty degeneration, carcinoma, epidemic cholera, the treatment of phthisis, the nature of hemorrhage, Bright's disease, &c. The reader who may deem it worth while to compare the present with former editions, will, probably, also notice among the most prominent changes, a more extended reference to the important microscopic discoveries of recent times, and their bearing upon pathology.”

D. F. C.

ART. XXV.—*Reports of Institutions for the Insane in the United States.*

1. *Of the Western Asylum, Virginia*, for 1849 and 1850.
2. *Of the Lunatic Asylum, Columbia, S. C.*, for 1849 and 1850.
3. *Of the Ohio Lunatic Asylum*, for 1848, 1849, and 1850.
4. *Of the Indiana Hospital for the Insane*, for 1849 and 1850.

1. In former years, we have generally found in the annual reports of Dr. STRIBLING, of the Virginia Western Asylum, a considerable amount of matter interesting and useful to the profession generally. The one before us, however, is mostly occupied with the domestic concerns of the institution. The establishment has been greatly enlarged within a few years. In 1834, the whole number of patients in the course of the year was only 40; in 1840, it was 91; and in 1849, 264. The official year ends on the 30th of September.

	Men.	Women.	Total.
Patients at the beginning of the year	118	87	205
Admitted in the course of the year	27	32	59
Whole number	145	119	264
Discharged	24	24	48
Remaining at the end of the year	121	95	216
Of those discharged, there were cured	13	19	32
Died	6	4	10

Causes of death.—Old age 3, marasmus 4, chronic diarrhoea 2, dyspepsia 1.

“By far the greater proportion of our patients,” says the report, “have been so long insane, and enjoy in so high a degree their physical health, that they rarely require medicine, and hence their comfort is, in the main, to be promoted by a judicious use of moral means.” The prospect of recovery is represented as favourable in only 13 of the 216 remaining in the asylum.

“On several occasions we have dwelt, at some length, upon the evils resulting from friends and officers practising deception upon the insane, in order to remove them to the asylum. We still have too much cause to regret this indiscretion (not to use a stronger term), on the part of those who should know better, and act differently; but it is gratifying to perceive that the public are beginning to appreciate the views heretofore presented. We trust that the day is not distant when the universal sentiment will demand that *any amount of*

force which may be necessary to the removal of an insane individual to the asylum shall be resorted to, rather than prevarication and stratagem."

In allusion to a donation of books from Miss Dix, Dr. Stribling says: "This lady is, by her unobtrusive and self-sacrificing labors, doing more for the cause of the insane, and especially that large and most helpless class, the pauper insane, than any other individual in our country; indeed, we might say, than all other individuals combined. Her benevolence is contracted by no selfish feeling, nor bounded by sectional limits, but is entirely disinterested and as expansive as our common country. Should no monument of brass or marble be erected to perpetuate her fame, she must, throughout after ages, occupy a prominent place in the memory and affections of all who can appreciate Christian virtue and admire modest worth."

We now come to the report for 1850. It says: "The additions in progress at the date of our last annual report were completed early in January. Apartments being thus provided for *more than two hundred additional patients*, we have been enabled to receive all who applied for admission."

	Men.	Women.	Total.
Patients at the beginning of the year	121	95	216
Admitted in the course of the year	80	52	132
Whole number	201	147	348
Discharged	46	27	73
Remaining at the end of the year	155	120	275
Of those discharged there were cured	31	14	45
Died	9	10	19

Causes of death.—Paralysis 5, epilepsy 3, marasmus 2, cerebral disease 2, "pulmonary disease" 2, dropsy 1, pulmonary consumption 1, exhaustion 1, jaundice 1, congestion of lungs 1.

"Of the 320 recoveries reported here since June 1836, 47 have been visited with a second attack of insanity, 7 with a third attack, 1 with a fourth, and 1 with a fifth. The relapses have therefore amounted to about 17 per cent. upon the recoveries. A large majority of these are again in the full possession of their reason, and many of them happy and useful citizens."

Of the 275 patients remaining in the asylum, the prospect of recovery is "favourable" only in 16. It is no wonder that, under such circumstances, Dr. Stribling should urge the importance of the treatment of insanity in its early stages, and present so formidable an array of authority as he does to support him.

2. By the report for 1849, of the Lunatic Asylum at Columbia, S. C., it appears that the buildings of that institution having been found inadequate to the demands of the public, extensive additions had been commenced.

Patients at the beginning of the year	91
Admitted in the course of the year	49
Whole number	140
"Cured and removed"	21
Died	11
Remaining at the end of the year	108

Dr. TREZEYANT urges upon the regents the importance of procuring more extensive grounds—that the patients may have more room for exercise—and of increasing the number of attendants for the purpose of inducing the patients to labor.

By the report for 1850, it appears that 54 patients were admitted in the course of the year, which, with the 108 in the asylum at the commencement of the year, makes the whole number 162; 27 were "cured and removed," and 15 died; leaving 120 at the institution when the official year closed.

"Many have been admitted this year," says the report, "with so feeble a circulation that their limbs and bodies have become purple, and, after the closest and most sedulous attention, ulcerations would occur, and they died from the

effect of the long-continued irritation. Many of those who have been some time with us have perished from anasarca, diarrhoea, and epilepsy.

"We have more than a due proportion of epileptic patients, and many are brought in after the disease has existed for years, and the powers of the man are perfectly prostrated. All such cases are sent for the purpose of relieving their friends of the trouble of attending them in their last and most loathsome hours, and we receive them only to attend to, and add to the comforts of their last days. Many are also received who have been detained at home, in close confinement, until their health is utterly destroyed, and almost every semblance of humanity so changed and perverted that it is a satire to call such beings *men*—and they are brought to us to die."

The officers of the asylum at Columbia are not the only ones who labour under these disadvantages.

The treatment, both medical and moral at this asylum, appears to be identical with, or very similar to that of the other similar institutions in this country.

3. At the Ohio Lunatic Asylum at the beginning of the official year which ended Nov. 15, 1848,

	Men.	Women.	Total.
The number of patients was	167	162	329
Admitted in the course of the year	91	72	163
Whole number	258	234	492
Discharged	81	74	155
Remaining at the end of the year	177	160	337
Of those discharged there were cured			93
Died			34

The number of cures is greater than that of any preceding year since the establishment of the institution.

In the report for 1849, the directors allude to the "coming necessity of making further provision for the insane, by the erection of two additional asylums;" and assert their belief that the time has arrived at which it is best to take initiative measures for the construction of one of them.

Although the cholera prevailed for a long period in and around Columbus, not one case of it occurred at the asylum. Several pages of the report are occupied with an account of the preventive measures adopted and pursued. They include "nothing original," and are such as would be suggested in the mind of most physicians. "We had less diarrhoea in the asylum," says the report, "than is common at the same period of the year; and no indications of dysentery until the cessation of the cholera, when two or three cases appeared, one of which proved fatal. The evidence of scurvy was clear, but not extensive in the house. It was chiefly confined to the males. The cases of dysentery appeared to partake of the scorbutic character to some extent; and this added to their severity."

	Men.	Women.	Total.
Patients, Nov. 15, 1848	177	160	337
Admitted in the course of the year	74	81	155
Whole number	251	241	492
Discharged	82	87	169
Remaining, Nov. 15, 1849	169	154	323
Of those discharged there were cured			94
Died			30

Near the close of this report, Dr. Awl, who hitherto had been its superintendent from the time at which it was opened, says: "Impaired health and a desire for retirement, both by myself and family, will render it proper, according to my judgment, that the responsibilities of the station should pass into other hands—an event which will try every endearment of my nature, but for which I hope to be prepared."

In the report for 1850, the directors say: "In the month of June last, Dr.

William M. Awl tendered to the Board his resignation of the office of superintendent. The Board was very unwilling to receive it. * * * He had been connected with the establishment from the laying of the first stone of the buildings. It had grown up, and expanded to its present magnitude, and attained its present position under his long-continued and anxious care and supervision. He has done honour to himself and the State. He has rendered a great service to the cause of humanity. The institution stands a monument of his zeal, judgment, energy, and ability, in this field of benevolent enterprise.

"The choice of the Board fell upon Dr. SAMUEL HANBURY SMITH, as his successor. This gentleman came recommended by the highest testimonials for character, ability, and science. His administration thus far gives promise that he will be found fully equal to the duties of the place, and that the institution will lose nothing by the change."

	Men.	Women.	Total.
Patients, Nov. 15, 1849	169	154	323
Admitted in the course of the year	112	81	193
Whole number	281	235	516
Discharged	108	90	198
Remaining, Nov. 15, 1850	173	145	318
Of those discharged, there were cured	49	50	99
Died	13	9	22

"The house is not only always full, but commonly crowded to an extent in the highest degree destructive of comfort to its inmates; besides inevitably retarding their cure, or perchance, preventing it altogether."

In allusion to the general exemption of the patients from epidemic diseases during the year, Dr. Smith says: "Even while the choleric pestilence was ravaging the city—was around us—and was twice introduced into our very midst (two mechanics employed in repairing the hot-air furnaces having been attacked), we were blessed with the same immunity. * * * If an unusually large experience be worth anything—if an experience of three tremendous epidemics of cholera in three different countries, has taught me anything, it is that good drainage and perfect ventilation, especially *natural* ventilation, where that can be obtained, are, of all hygienic means, by far the most important."

Dr. S. recommends the construction of a green-house, and the commencement of a botanic garden on the asylum premises. In reference to the treatment of patients, he says: "The want of mental occupation is still the greatest want in modern institutions for the insane; and, for my own part, I feel as if every patient lying or sitting about in a state of listless indifference, were a reproach to the institution in which he is allowed to fall into such a state of apathy. It is just those whom we find hanging about the sources of warmth, rarely exhibiting interest in anything going on around them, who most require mental exercise, in order to preserve them, if possible, from becoming wholly demented, or, at all events, to ward off as long as possible so wretched a climax. * * * I am anxious to commence a series of readings and lectures, as early as my excessive occupations will permit. I have also in contemplation *tableaux vivants*, musical parties, and other means of affording alternate or combined amusement and instruction." Neither schools nor lectures have hitherto been introduced into this asylum.

Whole number of patients received in 12 years	1558
Discharged cured	734
Died	201

Causes of death.—Consumption 28, marasmus 24, epilepsy 23, diarrhoea 22, fever 20, dysentery 19, inanition 17, apoplexy 12, atrophy 8, palsy 7, dropsy 5, inflammation of brain 4, pneumonia 4, pericarditis 2, inflammation of liver 1, chronic bronchitis 1, cancer uteri 1, erysipelas 1, cutaneous cancer 1. The total of these is but 200. In the report for 1849, Dr. Awl states that there had been two deaths by suicide in the asylum since its establishment.

"I have, with considerable trouble," says Dr. Smith, "prepared the follow-

ing statement, which has at least the merit of being *an approximation to the truth*, in regard to a very important matter:—

"The whole number of recent cases, *i. e.*, of less than a year's duration, which have been admitted into the institution from its commencement to the 15th of November, 1850, is 851; of which have been discharged cured, 584. There remain under treatment, whose cure in all human probability is certain, 47, which, added to 584, make 631, and give a percentage of cures on recent cases received of 75.43. The curability of recent cases in this institution would be exactly represented by these figures were it certain that the word *recovered*, when entered opposite a name on the books of the institution, is always properly employed. The term has probably been applied to many cases which were only *very much improved*, but not in scientific strictness *cured*—70 per cent. being considered by some authorities as about the limit of possible cures in recent cases.

"There have been 707 chronic cases received, of which 150 have been discharged cured, and the recovery of 12 more may be considered as certain. This gives 162 cures, or 22.91 per cent., pretty fairly representing the curability of such chronic cases as have been treated in the Ohio Asylum."

4. In December, 1848, the Indiana Hospital for the Insane was first opened for the reception of patients under the superintendence of R. J. PATTERSON, M. D., formerly Assistant Physician in the asylum at Columbus, Ohio. "So urgent were the applications, and so imperative the demands for admission," says Dr. P. in his first annual report, "that the institution was forced into operation before we were properly prepared to exercise a controlling and sanitary influence over those committed to our care. * * * Since the opening of the hospital, a period of eleven months, 104 patients have been admitted, and 28 discharged; leaving 76 now in the care of the institution. Of those discharged, 20 have recovered the right use of their reason, and 4 have died."

The insanity of one of the patients is attributed to the excessive use of quinine, and in two others to the loss of sleep. "It would seem," says Dr. P., "that the celebrated poet, Southey, became insane from the loss of sleep; for Wordsworth says of him, that 'he fell a victim, not to literary toil, but to his strong affection for his wife, which led him night after night to watch with sleepless anxiety over her sick bed;' and that 'his mind gave way under the long-continued deprivation of the natural rest of the body.'"

In his remarks upon bleeding in insanity, Dr. Patterson uses the following language: "*Raving mania* can be much more permanently controlled by the use of the warm-bath, cold applications to the head, warm foot-baths, mild cathartics, and, in some cases, by nauseants. *Bleeding quiets the patient temporarily, but the excitement returns with greater fury, and the system is less able to bear it than before. So far as I have observed the practice, bleeding does not accomplish the desired object, but the contrary; for it impoverishes the blood, reduces the strength of the patient, and thereby renders the nervous system more excitable.*"

From the report for 1850, we glean the subjoined statistics:—

	Men.	Women.	Total.
Patients at beginning of the year	35	41	76
Admitted in the course of the year	31	27	58
Whole number	66	68	134
Discharged	26	28	54
Remaining at the end of the year	40	40	80
Of those discharged there were cured	18	20	38
Died	1	0	1

"During the months of July and August, there was great proneness among our patients to diarrhoea and other bowel complaints, but by strict attention to cleanliness throughout the establishment, by a prescribed diet, and prompt medical treatment when indicated, through the blessing of Divine Providence no case was lost, or even suffered materially from these affections. With these exceptions, there has been but little sickness at the hospital during the year,

notwithstanding cholera and other kindred diseases prevailed alarmingly in the country about us."

From a personal acquaintance with Dr. Patterson, we believe that, aside from an appropriate education, he possesses many of those natural requisites unattainable by art, which qualify him as an excellent manager of the insane; and under his superintendence we anticipate a high rank for the Indiana Hospital.

We have now completed the special notices which were commenced in the issue of this Journal for April last, and continued in that for July. A few general subjects, however, remain, to which we wish to direct the attention of the reader. The following remarks in the Report of the Maine Asylum for 1848-9 appear to us as particularly truthful; and are worthy of a place here for the purpose of counteracting the disposition to estimate the success of institutions by a comparison of their published statistics:—

"Such varied circumstances influence the conditions and operations of every institution for the care of the insane, whether supported by States or by individual munificence, that little can be gathered from their reports by which to form comparisons of the success in treatment. Hence they are chiefly useful to enable those interested to contrast the present with the past, and to judge of the proper action for the future. In one State, having two institutions, differing in age and nature of the locality, in both of which the indigent are supported by the State, there are some striking contrasts. In the oldest, which is mostly filled with incurable cases which have been accumulating for more than thirty years, the recoveries last year were less than the deaths. In the other, of all discharges and deaths, fifty-five in a hundred were recovered. This affords no proof whatever that the one was more skilfully managed than the other. In some States, where the poor are supported from the State treasury, the incurables are seldom removed except by death; consequently, this last item is almost the only one to swell the number of discharges above the cures. In one State (asylum), more than one-third of the inmates are foreigners. As with us, the incurables of this class are never removed during life, and both that institution and ours are probably destined to see this class of *fixtures* become a majority.

"Some institutions, and ours is one, have the list of their discharges and deaths cruelly augmented by having to place on that list a great number of persons on whom no class of curative means can have any more effect for their recovery than if applied to so many skeletons. Such are idiots, paralytics, epileptics, the demented, and other cases of many years' standing; and, worse than all, those who are in the last stage of life, and those who are unfit subjects, or are improperly removed before time is given to benefit them. Since this institution went into operation, more than one-fourth of the admissions have belonged to one or other of these classes, either absolutely incurable at the time of admission, or taken from our care by the injudicious action of others. Several of these classes require and should have the care afforded by an asylum. But in hospitals for the insane, curable, or at least, recent cases should not be excluded by them."

For many years the reports of the institutions for the insane have been burdened with exhortations in regard to the importance of an early removal of persons attacked with mental disorder to an appropriate asylum. Dr. Brigham was the first, if we mistake not, to caution against the opposite extreme. Dr. McFarland, of the New Hampshire Asylum, in his report for 1850-51, treats the subject as follows:—

"It is proper to remark that, while too long a period is sometimes allowed to elapse after an attack of mental derangement, before the asylum is resorted to, the reverse is sometimes true; the individual being hurried from home before the exact nature of the disease is determined, or before the fitness of the remedy is well considered. Aberration of mind is frequently one of the symptoms of typhoid fever; ushering in the disease with so little physical disturbance as to mask the true malady. This is a state of things under which removal is almost certain death. Several have closed their existence with us, who, had

they been spared the exhaustion of a journey, might have passed the crisis of their disease in safety."

Dr. Bates, of the Maine Asylum, in his report for 1849, thus extends a similar word of caution:—

"No person should be sent here in whom the disease has not existed long enough to have it clearly ascertained that he or she *is insane*, and not in a state of febrile delirium. A mistake in the visiting physician, causing persons of the latter class to be transported many miles, has repeatedly augmented the danger, and death has taken place in a few hours after arrival. The present and previous reports will show a number of deaths taking place very soon after admission."

Dr. Kirkbride, in his report for 1850, alludes in a different connection to this class of cases:—

"The cases of delirium," says he, "cannot with propriety be included as insanity, the mental disturbance being of a peculiar character, and due to acute disease of a different kind, under which the patients were labouring. The admission of this last class of cases is always unfortunate; the patients generally being very ill, the exposure and fatigue to which they are subjected on their journey almost invariably cause a fatal termination."

In the reports which we have reviewed in the present and two preceding numbers of the *Journal*, the number of cases in which the condition of the patients in regard to marriage, is stated, is *ten thousand nine hundred and ninety-six*. They are as follows: Single 5253, married 4905, widowers 250, widows 588. Although the single exceed the married with surviving partners, yet the married and widowed—those who are and have been married—exceed the single by 480. The widowers are to the widows as 42½ to 100.

The number of cases in which the ages of the patients, at the time of the first attack of insanity are given, is *seven thousand three hundred and eighty-seven*. Arranged in the several decades of life, they stand thus: Under 20 years, 886; from 20 to 30, 2753; 30 to 40, 1863; 40 to 50, 1166; 50 to 60, 491; 60 to 70, 198; over 70, 30. The number between 20 and 30 years exceeds that between 30 and 40 by 47.7 per cent.

At the commencement of our notices in the issue for April last, allusion was made to the fact, that during the interval since our last preceding review of reports, three physicians who had been connected with institutions for the insane had been removed by death. They were Drs. AMARIAH BRIGHAM, JAMES MACDONALD, and SAMUEL B. WOODWARD. It is due to the memory of these distinguished men that we transfer to these columns some of the tributes elicited by their decease.

The managers of the New York State Lunatic Asylum in their report for 1849, to the Legislature, thus refer to the death and services of Dr. Brigham: "It has been our painful duty to record the death of our late superintendent, Dr. A. BRIGHAM, who died after a brief illness on the 8th of September last. His physical energies and general health had become impaired by his too close and long confinement and devotion to the discharge of his responsible and onerous duties, so that he fell an easy and unresisting victim to the fatal, but not severe attack of the disease which terminated his earthly labours.

"Dr. Brigham was appointed superintendent of the asylum on the 9th of September, 1842, and on him devolved the great labour of organizing the institution, and directing and superintending the fitting up of the various conveniences and fixtures necessary to adapt it to the uses for which it was intended. He applied himself to the task with untiring and unyielding devotion. He performed labours, and surmounted difficulties of which the public know but little, but which might well have disheartened a less determined man.

"By his published reports as superintendent of this institution, as well as by his other writings and labours, he has done much to enlighten the public upon the subject of the worst of human maladies, to mitigate the sufferings which it brings, and to discover and apply the means of its cure. Those who have been associated with him in the management of the asylum, as well as many, who through his skill, care, and attention, have been restored to health,

will long hold his memory in grateful remembrance for the many virtues that adorned his character, and the enlightened philanthropy and eminent ability with which he conducted the institution committed to his care."

The following extract from the records of the Monthly Committee of the Trustees of the Massachusetts State Hospital at their visit upon the 7th of January, 1850, will exhibit the estimation in which the character of Dr. Woodward was held by those with whom he had been associated in his important sphere of labour:—

"It is proper that this record should contain a memorial of a recent event of Providence which deeply interests the feelings not only of all concerned in the administration of this hospital, and of all who are or have been recipients of its benefits, but of the friends of the insane within this commonwealth and throughout and beyond the extent of our country.

"On the 3d instant, at 6 o'clock P. M., the Hon. SAMUEL BAYARD WOODWARD, the first superintendent of this hospital, died at his residence at Northampton. For several weeks he had suffered successive attacks of the severely painful disease which affected him while at the hospital. By these attacks it is understood that his constitution seemed to be so impaired that a restoration to his former health was not confidently expected; but the immediate cause of his death was found to be the rupture of an aneurism of the aorta, just above the diaphragm.

"Dr. Woodward was born at Torrington, Connecticut, on the 10th of June, 1787. In early life, he established an extensive medical practice in Weathersfield, Ct., and the adjacent towns, with great success and reputation. In the year 1830, the confidence of his fellow-citizens called him to the civil service of his native State in the office of a member of the State senate. He directed his studies to the subject of insanity, and had considerable experience in the treatment of mental disease before he was connected with this hospital. He was appointed superintendent on the 26th of September, 1832, before the hospital was opened for patients, and continued in office until June 30, 1846, a term of nearly fourteen years, in which he applied to his laborious duties all the powers of his body and his mind, with little indulgence for social pleasure or domestic comfort, or even for the demands of exhausted nature or painful disease. At the date of his resignation, he had had charge in the hospital of 2642 patients, of whom nearly all received perceptible benefit; and more than half the number should pray for blessings on him as one who had raised them from death to life. The system of this hospital was in many respects peculiar and new, and it was chiefly instituted by him. His example has always been recognized here as a perpetual presence by his worthy successor, who carries on the same good work with distinguished ability and success. His copious reports, which were appropriate to such an institution, and his occasional writings, gave him authority and wide-spread influence, and he had the happiness to see the fruits of his benevolent labours in other institutions established or improved in accordance with his wise suggestions, and in the progress of more correct opinions on the subject of insanity.

"For the important office of superintendent of a hospital for the insane, Dr. Woodward had extraordinary qualifications in his person, his disposition, and his mind. His person was a rare model of strength and manly beauty. On his brow sat courtesy and command in entire harmony, and it is no exaggeration to say, that his form and carriage were majestic. His stature was six feet two and a half inches; and, without the deformity of obesity, his weight was two hundred and sixty pounds. His temper was benevolent, liberal, sanguine, decided, and persevering. He understood readily the characters of men, had great power over their feelings, and easily gained their confidence and love. He was prompt and systematic in his business, and unsparing in labour. His mind was of a practical character. His powers of observation were vigilant and discriminating; and expression and life rather than books were the chosen subjects of his studies. Hence his thoughts had a freshness and confidence of truth which carried them to the hearts of men. All that he learned he kept in readiness for use, and he enforced his arguments with copious illustrations. His quick invention, under the control of sound judgment and common sense,

gave him abundant resources for the many exigencies of his arduous office. His attention was not confined to the circle of his own pursuits. Being a watchful observer of the signs of the times, he was ready to give his sympathy and aid to such objects as he approved.

"He retired, with his physical system wasted and disordered by the labours and anxieties inseparable from his position here, to a beautiful estate at Northampton, where for a time he seemed to find the benefit which he sought. He had the care of several unfortunate victims of mental disease, and still continued his studies in the science in which he was so eminent; and was sought for his wise counsels in ordinary medical practice as he had been in all his industrious life. Highly blessed in his domestic relations and in the large circle of his friendship, prosperous in the great objects of his life, and beloved and honored in the world, he was called away when the cup of his earthly happiness was full. While we mourn the loss of our friend and guide, strangers will unite their voices with ours to lament that the presence and example of the strong reaper has been removed, though the rich harvest of his good work remains."

The foregoing notices are from non-professional sources. The following are from the able pen of Dr. Ray, Superintendent of the Butler Hospital for the Insane:—

"Among the distinguished names that add a mournful interest to the obituary of the past year, are two whose eminent services in the cause in which we ourselves are labouring, seem to claim, with peculiar appropriateness, a word of grateful recognition, in an annual record like this. I refer to Drs. Macdonald and Brigham. The former, after superintending, for several years, the asylum at Bloomingdale, N. Y., with the unqualified approbation of its directors, opened a private establishment for the care of the insane at Flushing, furnished with provisions for ministering to their comfort and enjoyment, upon a scale that has never been equalled in our country. He was a gentleman of rare professional attainments, and possessed of moral endowments that commanded universal respect and affection. Although more particularly devoted to the wealthier classes, he cared much for the welfare of those who have no other claim for care than the powerful appeal that human suffering always makes to the benevolent heart. The defective condition of the municipal establishment for the insane of the city of New York, was one of those appeals, and, in conjunction with a few others, he undertook a series of changes that required much of his time and patience. His death, which happened shortly after, prevented him from witnessing the full benefit of his labours.

"Dr. Brigham commenced his labours in this department of the profession, as Superintendent of the Hartford Retreat, from which he was called, in 1842, to take charge of the lunatic asylum established by the State of New York, at Utica. This institution, for a few last years the largest in our country, he endeavoured to maintain in a state of constant advancement, and in this object he was eminently successful. He had high notions of the worth and dignity of his calling, and, though constantly suffering with ill-health, he never relaxed his efforts to reach, in it, a point of distinguished excellence. The amount of labour he performed in carrying out his views was wonderful, and the traces of his superintendence will not soon be effaced.

"Since the above was written, another has fallen whose name will ever be associated with the history of American hospitals for the insane. For thirteen years, Dr. Woodward was the Superintendent of the State Lunatic Hospital at Worcester, Massachusetts. A sanguine disposition which no obstacles could dishearten; a cheerful, buoyant temper, that gilded every circumstance with bright and pleasing hues, and a cast of intellect that enabled him to make the most of the materials at his command, admirably fitted him for an office peculiarly fruitful in discouragements, and accompanied by a certain wear and tear of spirit less incident to other spheres of professional exertion. He was liberally endowed by nature, and every gift he improved to the utmost in the service to which he was called. He possessed, in a remarkable degree, the faculty of impressing others with a sense of his abilities, and inspiring them, whether sane or insane, with confidence in his counsels. Many men have directed

larger establishments, but few, I apprehend, have held such intimate and salutary communication with so great a number of minds."

The beautiful establishment of Dr. Macdonald, at Flushing, is continued under the care of his brothers. P. E.

ART. XXVI.—*On the Preservation of the Health of Women at the Critical Periods of Life.* By E. J. TILT, M. D., etc. etc., 12mo. pp. 142. London, 1851.

THIS is one of those half popular, half professional works, of the beneficial tendency of which, we confess, we have strong doubts. The propriety of instructing females in all that relates to their sexual physiology, and in those hygienic rules which are adapted to insure the establishment and the regular and free performance of all the functions of their system, no one can dispute. But when, as in the work before us, the sound advice given in relation to the preservation of the health of women at the critical periods of their life; the repeated admonitions against the abuse of medicine, by domestic practitioners, in the disturbances, real or supposed, of the function of menstruation, and the frequent warnings as to the dangerous consequences that may ensue from not having early recourse to the advice of a competent physician, when that function becomes in any way irregular or deranged, is intermingled with strictly medical opinions, and directions for the proper therapeutical treatment of sexual disorders, it is very much to be feared that unprofessional readers, neglecting that which falls within their scope and province, will be misled into a belief that those directions may be safely carried out without the necessity of invoking the aid of the physician. There is in most persons, but especially in females, a kind of innate propensity to prescribe for the cure of disease, and every medical opinion that falls in their way, they treasure up and often sadly misapply, and every remedy for any given ailment they may chance to hear of, they are ready to recommend, without knowing or caring aught of the circumstances which indicate or forbid its employment.

We have no dispute with Dr. Tilt as to the correctness of any of the facts or principles set forth in the essay before us. Every portion of the work is, we admit, replete with sound teaching and good advice. We only wish that the advice to mothers had been separated from the excellent pathological and practical hints, which can be of no use, and may lead astray the general reader, but should be addressed solely to the profession. We do not, however, mean to say that, from the entire work, the young practitioner may not derive much useful instruction to guide his advice when consulted in reference to the management of the female at the period of the inception and that of the decline of menstruation.

The leading positions enforced by Dr. Tilt are:—

"I. To keep a girl in the nursery as long as possible," and thus "*to retard as much as possible the appearance of the first menstruation.*"

"The nursery," says Dr. T., "in the usual acceptation of the term, means rational food, rational hours of rest and of rising, and rational exercise at judicious times. It means the absence of sofas to lounge on; the absence of novels fraught with harrowing interest; it means the absence of the laborious gayety of theatres and of operas; the absence of intimacies which are of a too absorbing nature, and a wholesome subjection of every minute to rule and discipline."

If the author had added plenty of fresh air, his term nursery would then stand for a rational system of hygiene; a judicious course of physical and moral training.

"II. Not to let her be taken unawares;" that is, the girl should be prepared "to expect what is the common lot of her sex, so that the first appearance of the menstrual flow may neither be arrested by the alarm naturally felt at something hitherto inexperienced, nor by the dangerous applications to which in her ignorance she may imprudently have recourse."

"III. Never to seek to determine first menstruation by forcing medicines.

"IV. Never to give or take forcing medicines to promote the reappearance or the increase of the menstrual flow.

"V. Never to give or take purgatives during the week before and after menstruation, unless by medical advice.

"VI. Never to allow a daughter's constitution to be undermined by profuse or very painful menstruation, or by permitting it to return at shorter intervals than once a month.

"VII. Never to be so reckless of her own or her daughter's health, or so unjust to her medical adviser, as to let him prescribe in ignorance of her state," that is, as to the presence of the menstrual discharge.

"VIII. A respect for whatever may have received life;" consequently, the danger and immorality, when in the married female menstruation shall become suspended, of attempting by forcing medicines to bring it on, in order that pregnancy may be prevented.

"IX. A knowledge of the possibility of menstruation continuing during pregnancy, and of the danger of confounding this with other sanguineous uterine discharges.

"X. A knowledge of the possibility of menstruation continuing during lactation, without in any way forbidding it.

"XI. A knowledge of the reality of the dangers by which the change of life is attended.

"XII. A conviction that these dangers can, for the most part, be avoided by a judicious line of conduct."

These several subjects are commented upon by Dr. Tilt, in a brief but interesting and able manner, and illustrated and enforced by statistical tables and numerous cases.

As an example of the author's manner and matter, as displayed in the present essay, we present our readers with some extracts from the chapter on the decline and cessation of menstruation. The length of these extracts will be pardoned, inasmuch as they contain much to interest and instruct.

"I have now," says Dr. T., "to treat of the management of women during the last of the many revolutions by which their lives may be checkered: for it stands to reason, that habits, which have lasted more than thirty years, cannot be set aside without frequently entailing very serious ill-health. Popular prejudice has termed 'critical' the period of life characterized by this change—a term warranted by the experience of past ages, bearing the test of daily observation, and which gives peculiar importance to this inquiry. In asserting that this period of life is critical, I do not mean, however, to maintain with the older authors, that more women than men die between the ages of forty-five and fifty-five, for Duparcieux and Benoist de Chateauneuf have, by statistical inquiry, proved the contrary to be the case, but that the cessation of menstruation in women is followed by a greater amount of suffering and disease than is the lot of men during the corresponding portion of their career.

"Admitting the cessation of menstruation to be a crisis in the life of women, it behoves us to know by what evils it may be attended, and the remedies by which they may be prevented or alleviated. But I deem it necessary to preface my remarks by a pathological sketch of a subject, deriving additional importance from its intricacy and extreme obscurity; for, in the little that authors say on the matter, they generally copy each other, without, however, giving a satisfactory account of the diseases to which women are peculiarly liable at this time, much less, any well-combined plan of treatment, which is only to be deduced from sound pathological views."

"As that pathology is soundest which reposes on the basis of physiology, I must first inquire into the habitual methods of termination of the menstrual function, previous to investigating its diseased modes of cessation; or, in other words, elucidate, as I have previously done, the diseased condition by the *natural history* of the function. No better idea can be given of the different modes of termination of the menstrual function, and of the subsequent disorders thence entailed, than by analyzing one hundred instances, wherein I have carefully

noted the phenomena of its cessation, and of the patient's subsequent state of health.

"With respect to the quantity of the menstrual flow, it terminated gradually in 39 per cent.; by a succession of floodings in 19 per cent.; by a terminal flooding in 14 per cent.; by alternations of a little, and a considerable flow in 10 per cent.; by a sudden stoppage in 18 per cent. With respect to the periods of its occurrence, the flow appeared at irregularly protracted intervals in 79 per cent.; and at irregularly contracted periods in 21 per cent.

"The gradual termination, then, is the most frequent; and, as it is attended by a less disturbance of health, we should favour this mode of termination, as far as lies in our power, by the adoption of the remedies and regimen, by-and-by to be recommended; and here I may remark, that the frequency of flooding, amounting to 33 per cent., seems to indicate bleeding as the best imitation of the process by which nature seeks to work out the remodelling of the female constitution. A terminal flooding has, no doubt, been sometimes taken for a miscarriage, and *vice versâ*; but, in both cases, as the same plan of treatment will be adopted, no danger can ensue. The sudden stoppage of the function claims more attention, for it occurs more frequently than is supposed at an early period of life; it may be then considered to be merely a temporary suppression, and lead to the use of forcing medicines, and to serious mischief. This mode of cessation is not unfrequently mistaken for pregnancy in women married late in life, or in those who have long ceased to bear children; a mistake the more easily made if cessation coincides with some amount of swelling of the abdomen and breasts, with the secretion of milk, and other sympathetic disturbance, of which time only can show the fallacy. The converse may occur, and pregnancy be mistaken for cessation, and the imprudent employment of purgatives or forcing medicines may bring on a miscarriage. It should never be forgotten that pregnancy happening towards the fiftieth year has been too often considered an ovarian tumour and treated as such, to the detriment of both mother and child, even if the mistake does not cause the death of one or both.

"I know of a very sad case wherein this mistake happened to a lady who had been married twelve years, without family, and in whom menstruation suddenly ceased at forty-eight. The lady believed herself to be pregnant; but the absence of previous conception, her advanced age, and her state of emaciation, led a very distinguished country practitioner to imagine her to be afflicted with an ovarian tumour. The lady came to town to consult an eminent obstetric physician, and, receiving a confirmation of the former opinion, used a bandage, and applied mercurial ointment to the abdomen, but at the ninth month after she first supposed herself pregnant, she was delivered of a dead child. The Fabian policy is that best calculated to prevent such painful consequences: and *cunctando restituere rem* should be the motto of the medical adviser.

"After a long period of cessation, the flow may reappear and return regularly for months or years, without, however, indicating the return of procreative power. It has occurred to me to meet with an instance in which menstruation was protracted to the fifty-sixth year, in a case in which I was lately consulted by my friend and colleague, Mr. Chippendale; and since then I have been consulted by another patient, gifted with a strong constitution, and, although the lady is now in her fifty-eighth year, menstruation proceeds as regularly as ever. Amongst numerous instances related by authors, one of the most singular is that given by Meissner,* of a person who first menstruated at twenty, her first child was born at forty-seven, and the last of seven other children at sixty. Menstruation ceased, and reappeared at seventy-five, continuing until ninety-eight, then stopped for five years, again to return at the advanced age of one hundred and four, when, in 1812, she was still alive. Evidently confounding this occurrence with cases of flooding caused by organic uterine disease, Meissner and others attribute a host of evils to this reappearance of the periodic flow, whereas it is perfectly harmless, and should rather be considered a salutary effort of nature to prevent serious disease in certain constitutions.

* Almanach für Aertze und Nichtärzte auf das Jahr 1817.

All women should, therefore, be aware of the possibility of this occurrence, so that they may not forcibly repress the flow; but they should likewise be aware that it is necessary for the medical man to make a very careful investigation, in order to ascertain whether the loss of blood does not depend on cancer of the womb, or some organic disease of this viscus, susceptible of cure."

"No department of pathology has given rise to so much confusion as that which treats of the diseases of women at the critical time; while some, with Dewees and Meissner, deny that women are then more liable to disease, others, with Gardanne,† seem to consider as diseases of the critical time all those which may afflict a woman after she has passed her fiftieth year—a position evidently untenable, for many diseases attack women at that period, not because they are women, but on account of their being advanced in years, such as affections of the heart, or of the larger vessels, and softening of the brain, which are affections of old age.

"Diseases of the critical time may be divided into—1st, those which are of very frequent occurrence, and may be foreseen; 2d, those which occur as a repetition of morbid phenomena observed previous to first menstruation; 3dly, there are others which escape all calculation, and cannot be explained by the well-known fact, that the impetus of morbid action tells most forcibly on the weakest organ; for we must be cautious not to consider as disease of the critical time that which would have been long before discovered if looked for. However, those complaints, which, although previously developed, proceed with increased activity after that time, may fairly be considered as the result of an alteration in the constitution brought about by the change of life.

"1st. Convinced that a minute investigation into the *natural history* of the phenomena of cessation could alone give me an insight into the diseases of that epoch, I have carefully noted the morbid phenomena which occurred at cessation in one hundred women, and it seems to me that some of the most frequent symptoms may be referred to the cerebro-spinal system, and others to the ganglionic system of nerves.

"Cerebral Symptoms.

"Headache, sick headache, hysteria, and pseudo-narcotism	
had existed at menstruation in	64 per cent.
They were augmented in	36 per cent.
" remained the same in	18 "
" were less in	10 "
" did not exist in	36 "
	100

"Thus, when the habitual derivation from the sanguineous mass was no longer regularly performed every month, the cerebral symptoms were increased in thirty-six per cent.

"The most frequent of all the symptoms of menstruation is a peculiar cerebral symptom, not actual pain, sick headache, or hysteria, but *pseudo-narcotism*, which is a dull, heavy, stupid feeling, with a great tendency to sleep. It is seen in the greatest intensity previous to the first and last menstruation, and in the vigour of womanhood, as a consequence of the sudden suppression of the flow. It varies from a slight heaviness to variable shades of intensity, which prompt women, at different periods of life, to complain 'of a dimness of the eyes,' 'of heaviness in the head,' 'of a stupid feeling,' 'of a stupid headache,' 'of feeling heavy for sleep, but without pain,' 'of the possibility of sleeping anywhere,' 'of feeling lost and bewildered,' 'of a temporary loss of wits,' 'of the fear of going mad.' I recall the sense, although I may not the force, of the expressions by which I have so often heard women prove that the ovario-uterine organs have a specific influence on the cerebro-spinal system. It is so true that the peculiar state I have described resembles the influence of certain quantities of narcotic poisons on the brain, that when women of an advanced age present such phenomena, they are frequently, although in most cases erroneously,

† Avis aux femmes qui entrent dans l'âge Critique, Paris, 1816.

accused of being fond of drinking, which is the best proof of the truthfulness of the term proposed."

" Spinal Symptoms.

" Spinal or dorsal pains had existed in	70 per cent.
They were augmented in	46 per cent.
" the same in	17 "
" less in	7 "
They did not exist in	30 "
	<hr/> 100

" Hypogastric pains of a bearing down character, referred by women to the regions of the womb and ovaries, had existed in	51 per cent.
They were augmented in	30 per cent.
" the same in	12 "
" less in	9 "
There were none in	49 "
	<hr/> 100

" Thus, the nervous influence, which used to direct a regular discharge, is still in force, a fact proved by the persistence of the spinal pains in 70, and of the hypogastric in 51 per cent. They sometimes appear regularly every month, not unfrequently determining, in some severe cases, both leucorrhœa and diarrhœa.

" Ganglionic Symptoms.

" Am I wrong in referring the following symptoms, more particularly to that nervous system, the filaments of which, like a web, envelop the smallest arterial vessel in their inextricable mazes?

" Sensations of faintness, exhaustion, and sinking, often referred to the epigastric region, existed in	26 per cent.
Heats and flushes were noticed in	38 "
Perspirations in	30 "
Drenching sweats in	16 "

" These symptoms, little dwelt on by pathologists, derive great importance from their frequency, and also from the insight they afford into the means by which nature relieves the system of the fluids that are no longer discharged every month; for when the periodical secretions from the uterine and the intestinal surfaces are checked, it seems as if the mass of fluids were often thrown on the extensive surface of the skin, which is so frequently found to stand in antagonistic relation to these surfaces; hence arise the heats, the flushes, the gentle perspirations by which, in the generality of cases, further mischief is prevented. It is not surprising that it should be so, for long ago, Sanctatorius established, that 'insensible perspiration alone discharges much more than all the sensible evacuations put together.' *Sec. i. Aph. iv.*

" It will be remarked, however, that in sixteen per cent. the cutaneous exhalation, by its amount, became itself a disease, without relieving the patient so well as the more moderate exhalation; which would not be understood, were it not for the uncontradicted statements of the same accurate observer: 'That perspiration, which is beneficial, and most clears the body of superfluous matter, is not what goes off with sweat, but that insensible steam or vapour which in winter time exhales to about the quantity of fifty ounces in the space of one natural day.' *Sec. i. Aph. xxi.* 'Sweat is always from some violent cause; and as such, as static experiments demonstrate, it hinders the insensible exhalation of the digested perspirable matter.' *Sec. v. Aph. iii.*

" The drenching perspirations seldom last very long, but the heats, the flushes, the gentle perspirations, often continue to appear several times a day, ten or sixteen years after the cessation of menstruation." Dr. T. details a case to show the salutary effects to be derived from this agency.

" Acting on the principle of preferring a less to a greater evil, in two cases

wherein loss of voice occurred at the change of life, I have," he remarks, "given signal relief to the patients as soon as I have been able to determine the daily appearance of the flushes and perspirations; and as the patients had previously been under long and judicious treatment without much benefit, and as the great improvement in the voice of both ladies coincided with this determination to the skin, I consider that the patients' recovery should fairly be ascribed to that cause."

"Amongst other diseases occurring frequently at the cessation of menstruation, I must first notice those which implicate the organs that have attained the last stage of their functional activity, the womb and ovaries.

"I have already shown that flooding occurred, under various circumstances, in thirty-three per cent. of cases. An increased mucous secretion from the generative intestine is also a very frequent circumstance, for I found that—

" Leucorrhœa had existed in	58 per cent.
" was augmented in	44 "
" was stationary in	8 "
" was diminished in	6 "

"My experience confirms that of Lisfranc and Meissner, who assert that the cessation of menstruation is rather curative than productive of inflammatory diseases of the womb; the physiological atrophy of the organ checking its inflammatory development, for I only found four per cent. of inflammatory affections of the womb. It has happened that I have not met with a single case of cancer; but it is too well known that, at the change of life, women are more than ever, and more than man, liable to that terrific infliction; a fact which has been brought out in strong relief in the valuable table recently published by the registrar-general, and the latest of the many benefits conferred on the profession by Mr. William Farr.

"With respect to ovarian and uterine tumours, Dupuytren, who had for years vast opportunities of observation, and who paid great attention to the subject, asserted that one-tenth of all the women dying between forty and sixty, presented some abnormal development of the womb or ovaries. Meissner, so far as Germany is concerned, denies the accuracy of this assertion. I am not in a position to say how far it is true in England; but the table to which I have referred, shows that it is with ovarian tumours as with cancer, by far the greater number of cases occur between forty and sixty years of age.

"It is not difficult to understand that the pelvic plethora should often seek to find a vent on a surface immediately associated with the uterine; and accordingly it was found that—

" Hemorrhoids existed to various extents in	20 per cent.
They appeared for the first time after cessation in	12 "
" did not bleed in	4 "
" were bleeding in	8 "
" were considerably increased after cessation in	4 "
" remained the same in	2 "
" diminished at cessation in	2 "
Intestinal hemorrhage existed in	2 "

"In some cases, either because the intestinal plethora was less considerable, or because the nervous impulse was less, there was an increased mucous discharge from the intestines, instead of hemorrhage.

" Diarrhœa existed in	12 per cent.
" was irregular in	8 "
" was regular by coming on every month in	4 "

"When diarrhœa occurs at the change of life, it generally appears at irregular intervals; it may, however, adopt the regularity of the menstrual function, as in the instance of a lady forty-five years of age, in whom, at the accustomed time, diarrhœa came on, which the patient usually found to be the forerunner of menstruation. The former lasted three days, and gave relief, although it was not followed by the sanguinoid flow then, nor ever afterwards; thus, every month, for a whole year, diarrhœa came to the patient's relief.

"I lately met with a case where there had never been any premonitory diarrhoea; nevertheless, the cessation of menstruation was for five years followed by an habitual looseness of bowels, occurring two or three times a day, generally without colics. The patient enjoyed good health during that time, and is now a stout and tolerably healthy woman. Dr. Day notices the salutary effects of diarrhoea, consisting of watery evacuations, taking place without apparent cause, every three or four months after the cessation of menstruation; and he mentions the case of a lady eighty-seven years of age, in whom, for the last thirty years, this had occurred with great advantage. As a general rule, however, when diarrhoea has habitually accompanied menstruation, there is at the change of life a gradual diminution of both discharges, the cessation of the one marking the termination of the other.

"Such is the long list of infirmities which seem to me evidently dependent on the change; but to prevent an erroneous impression respecting the dangers of this crisis, we should observe that many of these diseases existed in the same patient, and that their repeated occurrence was spread over a space of time varying from one to ten years. The perusal of this list is sufficient to convince any medical man that the unavoidable diseases of cessation are more annoying than dangerous, and that the most frequent have attracted the least attention, while undue consideration has been given to those of less frequent occurrence.

"2d. With regard to the numerous other diseases which have been set down by some authors as those of cessation, there seems to be a possibility of preferring them to a law, expressed by saying, that *those affections which precede the first appearance of menstruation may likewise be expected to precede its cessation.* In proof that this position does not rest on my unsupported assertion, I shall state that Baron Alibert related to me that he had observed some cutaneous eruptions to appear twice only in life—once before the first menstruation, and once at its cessation. Briere de Boismont, and other authors, likewise notice the appearance of hysteria and epilepsy before these two important epochs in the lifetime of woman, the patient's life having been free from these diseases during the intervening portion of their life. In my own practice, I have twice seen them preceded by an abundant eruption of boils, frequently by continued diarrhoea, and still oftener by a great amount of pseudo-narcotism and hysteria, in cases where there was little or none during the persistence of the menstrual function, childbearing, or lactation.

"3d. With respect to the other diseases of cessation, I can only repeat that their appearance depends on some constitutional peculiarity, and is governed by no other law except that which directs the impetus of any morbid action to the weakest organ. Frequently, however, this explanation will not hold good, as in the case of a lady who consulted me very lately. For the last ten years, since cessation, she had been more or less troubled with water-brash, although, previously to that epoch, she had never even suffered from indigestion."

Dr. T. remarks that he has only been able to sketch broadly the principal outlines of a most interesting subject, that has never yet been treated in a manner deserving of its importance. His object has been, to attempt to elucidate, from more careful investigations, some general rules of treatment, and the conclusion to which he has been led is, that *the regulation of the circulating and of the nervous systems* are the guiding principles of action, to be kept constantly in mind to promote the cure of, or at least to guard against, the diseases brought on by the change of life; and this can only be effected by combining a judicious regimen with various therapeutical means, to a consideration of which, the next and last chapter of the work is devoted.

But we must here close our notice of Dr. T.'s essay. Our extracts from it have already been extended to an unusual length. Our apology for this, if an apology be necessary, is the interesting nature of the subject to which those extracts have reference, and the fact that they present a more precise and consistent sketch of the pathology of what is termed "the critical age of women," than we have yet met with. We trust that Dr. T. will find time to prepare a more extended treatise on the subjects embraced in the present essay, and that, in preparing it, he will see the propriety of addressing it solely to the medical profession.

D. F. C.

ART. XXVII.—*On the Employment of Water in Surgery.* By ALPHONSE AUGUSTE AMUSSAT, of Paris. Translated from the French by FRANK H. HAMILTON, Professor of Surgery in the University of Buffalo, and one of the surgeons of the Buffalo Hospital. Buffalo, 1851: pamphlet, pp. 62.

THE original of this paper, or essay, was presented to the Faculty of Medicine of Paris by its author, the son of the distinguished surgeon of the same name, as his thesis, at the time that he was a candidate for the honours of the doctorate. The translator informs us that it is said "to have been written under the instruction, and to embody the experience, so far as relates to the use of water in surgery, of his illustrious father, and in so much it may be regarded as an original record of the views of a master."

The subject is treated of under two heads: first, the History of the Employment of Water in Surgical Practice; and second, General Considerations upon its Use.

The use of water as an external means of treating injuries is, of course, of almost as ancient date as the fluid itself. But commencing with Hippocrates, from "the vasty deep" of whose observations the germ, at least, of almost everything in medicine seems to be derived, M. Amussat traces its gradual introduction and application, as an article of the *materia medica*, to the present day. Its benefit once fully demonstrated, as it was even by Hippocrates, one would suppose that its popularity would have known no wane, for it certainly contains, within its legitimate range, every element to insure favour: it is simple, cleanly, everywhere to be had, and more cheaply, too, than anything else, and it is efficacious. But it has ever ebbed and flowed here, as in its parent seas, sometimes much extolled, again condemned. The reason for the neglect into which it has often fallen is probably that stated at p. 11 of this pamphlet: "The public value lightly what nature gives us in profusion; but places a high estimate upon that which is scarce, or comes from afar, or is perchance dearly purchased, or is involved in mystery. Many also think that a remedy so simple as water can have no efficacy."

The reader will be much interested with the historical sketch here drawn.

The second division of the subject refers to the practical employment of water in surgery, and is discussed in two chapters. In the first chapter, the author propounds and answers the following questions:—

1. What kind of water ought to be used in surgery?
2. What are the effects of water at different temperatures?
3. What, in general, is the most suitable temperature?
4. How long ought the water to be continued?
5. What are the advantages of the use of water at a suitable temperature?
6. What are the inconveniences which have been attributed to this agent?

The second chapter of this division, and the last of the essay, describes the principal modes in which water is applied in surgical affections. These may be briefly enumerated as, the *Water-dressing*; by *Irrigation*, several more or less complicated contrivances being described to accomplish it; by *Immersion*, or by local baths. The various circumstances to be attended to in the employment of these several means are mentioned in connection with each.

The thesis of M. Amussat contains much that is valuable with reference to the use of this simple, admirable, and indispensable agent in surgery, and it does not bestow more commendation than the agent actually deserves. We do not wish to detract from its merits, when we say that it contains nothing new in any particular, so far as we can see, nor does it deserve the appellation of being specially learned in research, or scientific in explaining the effects of the remedy which it justly extols. It is not the less a useful essay.

The translation is good; the defects which we have observed in our perusal are chiefly orthographical, and those of punctuation, mistakes which are undoubtedly owing to hasty perusal of the proof-sheets.

F. W. S.

ART. XXVIII.—*An Analysis of Physiology; being a Condensed View of its Most Important Facts and Doctrines, designed especially for the Use of Students.* By JOHN J. REESE, M. D., etc. etc. Second edition, revised and enlarged. Philadelphia, Lindsay & Blakiston, 1852: 12mo. pp. 368.

WE are pleased to see a new edition of Dr. Reese's very excellent manual. The discoveries and advances which are daily making in all that relates to physiology, demand a revision, at short periods, of every elementary work in relation to the science, in order that its teachings may be in entire accordance with received facts and opinions. The revision which the analysis of Dr. Reese has undergone in the edition before us is evidently very full and complete. The whole matter has been differently arranged, most of the text has been rewritten, and much new matter has been added. Its general accuracy and clearness of outline cannot fail to render this analysis a useful manual to the student of medicine, for whose benefit, more especially, it was prepared; whether as an introduction to the more extended treatises and monographs upon the several subjects of which it treats or as a guide to him in a review of his progress in this department of natural philosophy, or, finally, as a convenient text-book to a course of lectures.

We recommend this analysis of Dr. Reese to the medical student in the character solely in which it is presented by the author, that of a convenient manual, not as a treatise adapted to communicate to him all that is necessary for him to know—to indoctrinate him into the entire body of facts and doctrines that constitute the science of physiology.

D. F. C.

ART. XXIX.—*Transactions of the Medical Society of the State of New York, during its Annual Session, held at Albany, February 3, 1852.* Albany, 1852: 8vo. pp. 160.

AMONG the prominent advantages which result from an organization of the regular members of the profession in district, county, and State societies, is the incentive it presents to the systematic study, by each physician included in these respective organizations, of the several forms of disease—their causes, character, usual course and termination—that fall under his immediate observation—and also to a careful observation of the effects of the remedies which have been recommended for their cure. While, at the same time, it furnishes, either directly or indirectly, a medium for communicating to the profession at large the results of this study and of these observations; causing thus the labours of the individual members most effectually to contribute to the augmentation and perfection of the common stock of medical knowledge.

Within a few weeks past we have had an opportunity of examining the *Transactions* of the Medical Societies of a number of the States—some which have been in existence for a long series of years, others of more recent origin—and we feel convinced that it is upon the labours of these State organizations, with those of the county, district, and local societies embraced in each, that we are mainly to depend, not only for a correct knowledge of the endemic and epidemic diseases of the several sections of our country and of the most effective means for their management, but also for the establishment of those educational and ethical improvements in our profession, calculated to elevate its members to the only standard which shall enable them to fulfil faithfully, in all their wide extent, the duties of the scientific and practical physician.

The *Transactions* of the New York State Medical Society, at its session of the present year, though no doubt calculated to exert a beneficial effect upon the condition of that portion of the profession the interests of which are committed

to its charge, present no very important contributions to either of the departments of medical science.

The Annual Address by the President of the Society, Dr. James H. Armsby, contains a very interesting sketch of the establishment of hospitals for the reception and treatment of the sick, and of their history from the ninth century to the present period. Though a mere outline, still the author has indicated most of the larger institutions of this kind now existing in Europe. He concludes by an appeal in behalf of the hospital in progress of erection in the city of Albany.

The second article in the present volume of *Transactions* is on Dislocation of the Femur on the Dorsum Ilii, by William W. Reed, M. D., of Rochester. This paper is one which demands the attentive perusal of every practitioner. The author has endeavoured to show that the ordinary means put in practice for the reduction of this dislocation are not only unnecessary, and subject the patient, consequently, to an amount of pain, and often prolonged suffering, which may be always avoided, but that they are founded on an incorrect idea of the chief resistance and obstacles to be overcome, in order to replace the head of the bone in its natural position.

The third article is on Epidemic Diarrhœa, by Dr. William Woodward, of Big Flatts. The remarks of the author are confined almost exclusively to the etiology of the form of diarrhœa—with bilious, mucous, or serous discharges—which more frequently occurs during the summer and autumnal months in his vicinity.

Dr. Woodward believes that the diarrhœa alluded to, proceeds from a source similar, but not identical with that which produces malarial fevers and Asiatic cholera; and this cause he supposes to be "the introduction and generation in the system of parasitic fungi or moulds."

The cryptogamous origin of disease is by no means a new doctrine. In its support, a series of specious arguments have been adduced by several of the older writers, and the series has been still further extended by one or two modern writers, by whom the doctrine has been revived. It is, however, when carefully examined, encompassed by so many difficulties, and so replete with contradictions, that it is impossible for it to be generally received, or to command even a large number of supporters.

A Biographical Sketch of the Life and Professional Character of Dr. James R. Manley, of New York, by Chas. S. J. Goodrich, of Brooklyn, follows next in order. It is very well drawn up, and does full justice to the character of the deceased, who, although a Philadelphian by birth, from his long residence in New York, and the many prominent positions that he there occupied through the partiality of the profession and the public, had become identified with the physicians of that metropolis and State.

The fifth article is an abstract of a case of Pleuro-pneumonia, by Dr. Samuel Shumway. It does not present any point of particular interest, excepting the rather uncommon fact of a natural cure of the empyema of the left pleural cavity being attempted by the formation of an external opening. The cure was finally effected by the performance of the operation for empyema.

This is followed by an address delivered before the Oswego County Medical Society, by its President, Dr. B. E. Bowen. Its subject is a brief history of the Society.

A highly interesting communication is next in order, On Deaf and Dumb Institutions, by Peter Van Buren, M. D. It does not admit of any satisfactory analysis.

Article eighth is on the Vital Statistics of the City of Brooklyn, by Charles S. J. Goodrich, M. D. By this it appears that the ratio of deaths to population in that city is less than 1 in 40.

The next article is a reprint of the very excellent report of the Committee on Medical Education, by W. Hooker, M. D., presented to the American Medical Association, at its session of 1851.

The volume closes with an abstract of the proceedings of the Society at its annual session of 1852.

D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Functions of the Membrana Tympani, the Ossicles and Muscles of the Tympanum, and of the Eustachian Tube in the Human Ear: with an Account of the Muscles of the Eustachian Tube, and their Action in Different Classes of Animals.*—By JOSEPH TOYNBEE, Esq., F.R.S. The author commences his paper by making some observations on the general arrangements of the *ossicula auditûs*. The malleus and incus being firmly connected together by ligaments, are considered as a single bone, forming an elastic arch, the anterior extremity of which is firmly attached to the Glasserian fissure, the posterior to the anterior part of the mastoid cells. The movement of this arch is that of rotation; and it is effected by the tensor tympani muscle. When this muscle contracts, the lower part of the arch, consisting of the handle of the malleus and the long process of the incus, is drawn inwards; by this action, the *membrana tympani* is rendered tense, and the stapes being pressed towards the cavity of the labyrinth, the fluid in the latter is compressed.

The anatomy and attachments of the *stapes* are next minutely described. The base of this bone (generally stated by writers on the physiology of the ear as being attached to the margin of the *fenestra ovalis* by a simple membrane, *ligamentum annulare bascos stapidis*) is shown to possess some points of considerable interest. Instead of a simple margin to which the ligament above noticed is fixed, the base of the stapes is said to present a circumferential surface for articulation with the *fenestra ovalis*. This circumferential surface, larger at the anterior and posterior extremities than in the middle, is covered by articular cartilage. The surface of the *fenestra ovalis*, to which the circumference of the base of the stapes is applied, is somewhat larger than that of the stapes. It is smooth, has a very compact structure, and is not covered by cartilage.

The base of the stapes is attached to the *fenestra ovalis* by two ligaments. The inner or vestibular ligament passes from the inner margin of the *fenestra ovalis* to the inner margin of the circumferential surface of the base of the stapes. The outer one passes from the outer margin of the *fenestra ovalis* to the corresponding margin of the stapes. These two circular ligaments leave between them a space which may be considered as an articular cavity; this cavity always containing a sufficient quantity of fluid to lubricate the articular surfaces of the bones.

The movements of the *stapes* are of two kinds, one being produced by the action of the *tensor tympani*, the other by the *stapedius* muscle. If the tensor tympani muscle be drawn in the direction of its course, while the cavity of the vestibule has been exposed to view, the base of the stapes will be observed to be slightly projected towards the cavity of the vestibule, and it returns to its normal position as soon as the muscle is left quiescent: the ligaments above de-

scribed appear to be the organs whereby the stapes is again drawn outwards. In these movements, the stapes may therefore be described as passing to and fro within the fenestra ovalis, as a piston does in a cylinder. The *second* movement of which the base of the stapes partakes is one of rotation, and it is effected by the stapedius muscle. To show this movement, it is requisite to perform one or two careful experiments. The stapedius muscle being exposed in its canal, while the stapes is left undisturbed in the tympanic cavity which has been laid open, if the muscle be drawn in the direction of its course, the anterior crus of the stapes is observed to move slightly outwards and backwards. In what manner the base of the stapes is effected during this movement of the crura it is difficult to decide; but it would appear probable that its anterior part is drawn outwards from the cavity of the vestibule, while the posterior part was pressed inwards, though to a less extent. That the action of the stapedius muscle is to relax the fluid of the labyrinth, is, however, shown by the following experiment: The tympanic cavity and stapedius muscles being exposed to view, a section is to be made through the cochlea, a small portion of the *scala vestibuli* being left continuous with the cavity of the vestibule. If the stapedius muscle be now drawn in the direction of its course, the fluid in the cut extremity of the *scala vestibuli* is observed to recede slightly towards the vestibule, and it returns to its former position as soon as the stapedius muscle is left quiet. A second action of the *stapedius* muscle is to act as a laxator of the *membrana tympani*, and it thus appears that the *stapedius* muscle is the antagonist of the *tensor tympani*; and it seems to be brought into action during the act of listening, while the *tensor tympani*, on the contrary, contracts when the ear has to be protected from any loud vibrations.

The next part of the paper is devoted to the consideration of the functions of the *membrana tympani*; which, besides the one usually ascribed to it, viz., of receiving the sonorous vibrations from the air, and of conducting them to the chain of bones and thence to the labyrinth, the author considers to be as follows:—

1. To act in conjunction with the ossicles and muscles of the tympanum as the analogue of the iris in the eye, and to exclude from reception by the labyrinth, of such strong vibrations as would be injurious to its integrity; also, in exactly opposite circumstances, to receive the most faint undulations, which would not be perceived unless the *membrana tympani* were rendered less tense than is the case in ordinary circumstances. The former of the two duties is performed by the *tensor tympani* muscle, the latter by the *stapedius*. The *membrana tympani* is not only of use in preventing powerful sonorous vibrations from compressing too forcibly the expansion of the auditory nerve, but it also protects the labyrinth from the forcible pressure of air, or of a foreign substance in the meatus, during a blow on the ear, or the introduction of a solid body which presses against the *membrana tympani*.

2. The *membrana tympani* shuts out the air in the meatus from that in the tympanic cavity, and by this means an atmosphere of certain physical conditions is constantly kept in contact with the membranes between the tympanum and labyrinth.

The *second* part of the paper contains a description of the Eustachian tube in man. Anatomists seem to have inferred that the Eustachian tubes, in their natural state, are constantly open, and that the air of the tympanic cavities is always continuous with that in the fauces. An examination of the guttural portion of the Eustachian tube in man and animals has led the author to conclude that, excepting during muscular effort, this orifice is always closed, and that the tympanum is a cavity distinct from the outer air. The agents whereby the Eustachian tubes are opened in the human subject are the muscles of the palate, and it is by their action, during the process of swallowing, that the tubes are ordinarily opened. That the act of swallowing is the means whereby the Eustachian tubes are opened, is shown by some experiments of which the following may be cited: If the mouth and nose be closed during the act of swallowing, a sensation of fulness and distension is produced in the ears; this arises from the air, which is slightly compressed in the fauces, passing into and filling the tympanic cavities; upon removing the hand from the nose, it

will be observed that this feeling of distension does not disappear, but remains until the act of deglutition is again performed, but while the nose is not closed; in this experiment, the Eustachian tubes were opened during each act of swallowing; but during the first act, while they were open, air was forced into the cavity of the tympanum by the contraction of the muscles of the fauces and pharynx, and the orifices were again closed, and remained so until the second act of swallowing, which opened the tube and allowed the air to escape. That the act of deglutition opens the Eustachian tubes, was inferred also from the custom usually adopted of swallowing while the descent in a diving-bell is performed; by this act the condensed air is allowed to enter the tympanum, and the sensation of pain and pressure in the ears is avoided. The author then proceeds to show that the tensor and levator palati are the muscles which are attached to and open the Eustachian tubes in man, and the mode in which they act is pointed out.

The *third* part of the paper is devoted to the examination of the Eustachian tube in animals: and the author arrives at the conclusion that, in Mammalia, Birds, and those reptiles having a tympanic cavity, the Eustachian tubes, as in man, are closed, excepting during muscular effort. In some *mammalia*, the muscles opening the tubes are, as in man, those belonging to the palate; in others, the function is performed by the superior constrictor of the pharynx. In *birds*, it is shown that there is a single membranous tube, into which the two osseous tubes open; this membranous tube is situated between, and intimately adherent to, the inner surface of each pterygoid muscle, and by which muscles the tube is opened.

The conclusion respecting the influence of the closed Eustachian tubes, to which the author arrives, is that the function of hearing is best carried on while the tympanum is a closed cavity; that the analogy usually cited as existing between the ordinary musical instrument, the drum, and the tympanum, to the effect that in each it was requisite for the air within to communicate freely with the outer air, is not correct. The view that the sonorous vibrations of the air in a closed tympanic cavity are more effective in impressing the membrane of the fenestra rotunda than when it is open to the outer air, is strengthened by the performance of the following experiment with the tuning-fork: If this instrument be made to vibrate by striking it against a firm solid, and if the handle be then placed in contact with the head, the sound, at first loud, gradually becomes fainter, and soon ceases to be heard; if, at the moment that it has ceased to be heard, a finger be placed over the tragus of one ear, and firmly pressed so as to close the external meatus from the outer air, the sound of the tuning-fork is again heard, and continues to be heard for some seconds; thus showing that the sonorous undulations existing in the external meatus were not sufficiently powerful to sensibly affect the membrana tympani until they were wholly confined by the walls of the tube when closed.

The leading results arrived at in the paper are as follows:—

1. That a principal function of the membrana tympani muscles and ossicles of the tympanum, is to act as the analogue of the iris in the eye.

2. That the tensor tympani muscle, by drawing tense the membrana tympani, and by compressing, at the same time, the fluid in the labyrinth, protects the ear from the injurious influence of very powerful vibrations.

3. The stapedius muscle, by slightly relaxing the membrana tympani and the fluid of the labyrinth, places the ear in a position to be influenced by vibrations of a most delicate character.

4. Another function of the membrana tympani is to form part of the resonant walls of the closed tympanic cavity.

5. The guttural orifices of the Eustachian tubes are closed, and the tympanic cavities do not communicate with the cavity of the fauces, excepting during certain muscular actions.

6. In man and some mammalia, the Eustachian tubes are opened by the muscles of the palate; in other animals, by the superior constrictor of the pharynx.

7. In birds, there is a membranous tube common to the two osseous Eusta-

chian tubes, and this common tube is opened by the action of the internal pterygoid muscles.

8. For the function of hearing to be perfect, it is requisite that the tympanic cavity should be closed from the outer air.—*Proceedings of Royal Society.*

2. *On the Structure, Function, and Diseases of the Liver; and on the Action of Cholagogue Medicines.*—C. HANDFIELD JONES, M. D., in a communication read before the Royal Medical and Chirurgical Society, described the minute structure of the liver as consisting essentially of a mass of nucleated cells or colloid particles, usually more perfectly formed than the cells either of the salivary or renal glands, presenting a distinct nucleus, with a nucleolar spot, an exterior envelop, and an included mass of soft, semi-solid, albuminous substance, which commonly contained a few oily molecules. In addition to these, in well-nourished livers, were numerous free nuclei, imbedded in albuminous blastema, which exhibited various stages of progress towards the mature or perfect cell. The oily contents of the cells were subject to great variation, both in the same individual and in different classes of animals;—the less perfect the type of the respiratory process, the greater the quantity of oily matter in the hepatic cells. The cells in their general mass constituted the hepatic parenchyma; this might be subdivided into smaller portions, called lobules, which were separated from each other more or less completely by fissures, the fissures themselves being continuous with canals that ramified throughout the parenchyma, and which, from containing the portal vein and its associated vessels, had been termed portal canals. In reference to the mode of distribution of the vessels, originally so well expounded by M. Kiernan, the author remarked that he decidedly agreed with Theile, who denied the existence of the vaginal branches and plexus of the portal vein mentioned by M. Kiernan. The author quoted from a paper by Mr. Paget, who had described these vaginal plexuses to be derived, not from the portal veins, but from the hepatic arteries, from which they were completely filled, when both arteries and veins were at the same time injected. The interlobular portal veins were therefore derived directly from the portal veins; and those which appeared to be vaginal branches of the portal vein were its internal roots, by which it received the blood which had served for the nutrition of the hepatic ducts and other vessels of the liver. After alluding to the mode of ramification of the hepatic artery, and the divisions of the hepatic ducts following the branches of the portal canal, the author referred to the relation which existed between the ultimate ducts and the cells constituting the parenchyma of the lobules. The prevalent opinion had been, that these cells were exactly homologous to the cells of the renal tubuli or salivary vesicles, like them growing on a free surface open to the exterior. Hence some anatomists had believed they had detected a basement-membrane, forming anastomosing tubes, constituting a true lobular biliary plexus. Others, unable to find a basement-membrane, had described the ducts as continued into the parenchyma of the lobules, as channels without proper walls, mere intercellular passages. After referring to the researches and opinions of Weber, Müller, Professor Retzius, on the one side, and of Val Guillon, Gerlach, and Dr. Carpenter, on the other, the author stated that the views of Kölliker, who denied the existence of intercellular passages in the lobule, agreed very nearly with his (the author's), and conceded his main position, that the cavity of the ducts was quite shut off from the cells of the lobules or their interspaces. The structure of the ultimate ducts, which the author had first discovered, was peculiar, and seemed to indicate strongly that they exerted active functions, and that they were something more than mere afferent canals. The injection of the duct, in the livers of pigs, by the double method, using separately saturated watery solutions of bichromate of potass and acetate of lead, exhibited an abundant yellow precipitate in the fissures; but in very few parts did it penetrate the lobules, which must have happened if there existed a lobular biliary plexus, or a plexus of intercellular passages. The author conceived, therefore, that the hepatic ducts did something more than merely carry out already elaborated bile. The ultimate ducts were far too small, and too sparingly distributed, to be able to take up the bile from so vast a mass of cells as that which consti-

tuted the parenchyma. If the ducts did not extend beyond the margins of the lobules, of which the author had no doubt, then the bile must be transmitted from cell to cell; or there was a march of cells outwards from the centre to the circumference; or else the bile, arriving at the margin of the lobules, was taken up by the ultimate ducts in some unknown way. The author thought such assumptions groundless and unnecessary; and that the pathological state of fatty liver, as well as the fatty liver occurring naturally in fishes, showed that the secretion of the parenchyma was not identical with that of the ducts, for the gall-bladder could hardly contain deep-green bile, when the parenchyma was naught but a mass of oil. He concluded, then, that the parenchymal cells of the lobules did not merely secrete bile which was carried off unaltered by the ducts, but that the cells secreted biliary material, or some of its components, which were not fully elaborated or formed into perfect bile, except by the action of the ultimate ducts. Proof was then offered that the hepatic cells did not ordinarily contain bile, although it was commonly held they did. He believed that to be a diseased or exceptional condition, not found in the hepatic cells of slaughtered or healthy animals. Furthermore, a yellow tint in the cells was no proof of the presence of bile; it showed merely the presence of pigment, and yellow pigment is found in the fat of some animals quite independent of biliary secretion. Chemistry must be resorted to, to solve the question of the presence of bile in the hepatic cells. The author had made alcoholic extracts of the livers of different animals, and having evaporated to dryness, the residue, when dissolved in water, failed to show, by Pettenkoffer's test, any reaction characteristic of the presence of the bile. The author, however, did not wish to express a positive opinion, but he thought that the received opinion had need of more direct evidence, before it could be regarded as proved. He then detailed the mode in which the morphological structure of the ultimate biliary duct fulfilled the function of secretion. The chemical changes which the ultimate ducts effected, might be conceived according to the hypothesis of Lehmann; and a summary of our present knowledge might stand as follows: sugar, oil, and a yellow pigment were found in the parenchyma of the liver; bile is not found there, but in the ducts; it is inferred, then, that the ducts, through their ultimate extreme portions, *make* the bile. The author next proceeded to detail some experiments made relative to the action of cholagogue medicines, the results of which led him to believe that mercury, muriate of manganese, and colchicum, were the only ones which seemed to increase the production of yellow pigmentary matter in the cells of the liver. They also increased the production of glyco-cholite and tauro-cholite of soda; but it had to be determined whether the quantity of these principles was always proportionate to the yellow pigment. It was clear that the cholagogue action of a medicine, its emulging effects on the ducts, was distinct from that which it excited in the production of biliary pigment. One very important effect of the administration of mercury on the liver, was noticed to be congestion of this organ; an argument rather forbidding the use of the remedy in inflammation of the substance of the liver, a plan otherwise recommended by analogical experience. The author then passed to the subject of diseases of the liver; the microscopic appearances of fatty liver were detailed, and the question, what constituted true fatty degeneration of the liver, discussed. Was it a simple increase in the quantity of oil naturally existing in the hepatic cells, or was it a further and more important change? He believed the latter. In the liver of animals artificially fed on oily food, and subsequently examined, the cells, as well as the inter-cellular substance, were loaded with oil-molecules: the accumulation of oil was equal everywhere. But in the morbid state of fatty degeneration, the oil-drops were not inclosed in distinct cells, but appeared to lie in an indistinct and granular, or semi-fibrous substratum. Another point of difference consisted in the absence of sugar in true fatty degeneration; while in the liver of an animal, fed on oily food to produce a fatty liver, sugar could be detected. Another point of importance was the limitation of fatty degeneration to the margin of the lobules; it was not a mere accumulation of oil in the marginal cells, but a destruction of those cells; a liver thus affected presented the lobules marked out by a zone of opaque matter. No satisfactory explanation

of this tendency of oil to accumulate in the marginal cells could be offered. Fatty degeneration of the liver might occur in very different diseases; it was by no means peculiar to phthisis. Reference was then made to the waxy liver of Rokitsansky, with which the author was not sure that he was acquainted. Cirrhosis was then mentioned, and Rokitsansky's description quoted, as also that of Dr. Budd, whose views expressed the opinion ordinarily received, but from which the author in some degree dissented. The author believed that an unhealthy nutritive process was the essence of cirrhosis, and might be developed in one of three situations. 1. In the larger and moderate-sized portal canals, excluding only the smallest. 2. In these last, and in the fissures. 3. In the smaller canals and fissures, and in the substance of the lobules. The first form produced common *hobnail* liver; the second and third, the tough, firm, dense liver, sometimes termed brawny. The author considered cirrhosis to represent essentially a degenerative process, and to arise from the effusion of an unhealthy plasma, not only in the canals and fissures, where it induced unnatural increase, but also in the external part of the lobules, where it passed into a solid form, and constituted an amorpho-granular substance, compressing the capillaries and obstructing the secreting cells. The thickening and condensation of the fibrous tissue in the liver were thus not so much the effect of an inflammatory action, as of a low degenerative process, analogous to that which stiffened the valves of the heart and contracted the orifices; and which view the author thought was supported by the results exhibited in a table appended to the paper. The subject of jaundice next received attention. This was a disease that manifestly resulted from the conveyance into the blood of bile pigment, a constituent of the bile which was essentially excrementitious, and intended to be cast out with the fecal matter. In many cases it existed only as retained excretion; in others it seemed to be formed in excessive quantity, as in the acute yellow atrophy of the liver. Yellow matter was often found in the central cells of the lobules, and nevertheless, there was no jaundice. It should be borne in mind, that the yellow pigment, as it existed in the cells, did not evidence the presence of biliary matter, of cholic acid, or its conjugates. The yellow matter could be extracted by alcohol, and its characteristic reaction obtained by nitric acid, but Pettenkoffer's test decided against the presence of any organic biliary acid. The deep colour of the urine in jaundice depended on the presence of bile pigment solely; no trace of cholic acid was discoverable. The author considered the majority of cases of jaundice to depend on the absorption into the blood, not of completely formed bile, but of one of its constituents only, the yellow pigment; and this might take place in one of three ways: 1, by a mechanical obstruction to the flow of bile into the intestine, through the ductus communis choledochus; 2, from inaction of the elaborating ducts; 3, with or without impairment of the action of the excretory ducts, when an increased quantity of yellow pigment was formed in the parenchyma of the liver.—*Lancet*, June 26, 1852.

3. *Connection of the Recollection of Words with the Anterior Lobes of the Brain.*—Dr. ALISON observed, at a meeting of the Edinburgh Medico-Chirurgical Society (3d March, 1852), that he recollected three fatal cases occurring in the hospital, in which the evidence was as strong as single cases could afford, against the notion of the connection of the power of speech, or rather the recollection of words, with the anterior lobes of the brain. In one, an abscess as large as a hen's egg had formed in one anterior lobe of the brain, and the other lobe had been considerably displaced by the enlargement of the diseased one; but this man had showed no loss of recollection of words up to six hours before death, when he became comatose. In the other two cases, there had been almost total loss of the memory of words (along with hemiplegia), for many months before death; and the acts of mind, which seemed nearly natural, had been expressed by signs almost entirely; but in both these the anterior lobes of the brain were found to be sound, and the disease was confined to the outer side of the corpus striatum of the hemisphere opposite to the palsied limbs.—*Monthly Journ Med. Sci.*, May, 1852.

4. *Lateral Hermaphroditism.*—Dr. BAXON brought before the notice of the Surgical Society of Ireland (May 1, 1852) a very remarkable instance of lateral

hermaphroditism—a fusion of the generative organs of both sexes. The subject of it had died of phthisis. Dr. B. had not become acquainted with the sexual peculiarities of this individual until shortly before death. Dr. B. ascertained, however, that at the birth of the individual there was considerable doubt as to the predominant sex, but that at length it was pronounced to be a female, and baptized by the name of “Anne.” In a year subsequently, however, the organ representing the penis had so increased in size that a different conclusion was arrived at, and the name changed to “Andrew,” since which period he had been always treated and looked on as a male; and as he grew up, even excelled in many of the manly exercises. His predilections were, according to his own statement, for females, and it was ascertained that he had never menstruated.

Dr. Banon gave a full and minute description of the external and internal organs of generation which were present in this individual, by which it appeared that he possessed a penis of the usual size in the male adult, and provided with glans and prepuce, but that it was imperforate, a rudimentary opening only existing in the site of the orifice of the urethra. The individual had himself stated that it was, during life, subject to erections. On raising up the penis, Dr. Banon observed that the female external organs were present in a nearly perfect condition. The labia were well marked, but terminated behind rather abruptly, the fourchette being absent. Within these the nymphæ were seen occupying their usual situation, and between them there was a longitudinal opening which led directly to the bladder. Behind this urethral opening was observed one of a more circular form leading to a canal in the direction of the uterus, and separated from the bladder in front and the rectum behind by distinct septa. This orifice was so small as to admit only of a No. 8 catheter, and was surrounded posteriorly by a distinct hymen. The mons veneris was not developed, which might have been owing to the great emaciation present. Many of the secondary characters of the male were observed. The hair, arms, hands, lower limbs and feet, the larynx, all partook of the male character. The voice, during life, was decidedly masculine.

On the other hand, there was a feminine character in the features of the upper part of the face, and the pelvis and skull were decidedly those of the female. The occipital regions of the latter were unequally developed on each side, which point was dwelt upon by Dr. Banon as illustrating, in this instance, the interesting physiological fact, that the development of the reproductive organs is influenced by this portion of the brain, these organs being, as he afterwards pointed out, situated principally on the side of the body opposite that of the increased development in the posterior lobes of the cerebrum and cerebellum.

On dissection, the penis was found to be composed of cruræ, uniting in the usual manner to form the body. A substance, similar to the corpus spongiosum urethræ, could be traced anteriorly to the glans, and behind becoming bifurcated to inclose the longitudinal opening leading to the bladder. The prostate and Cowper's glands were absent. The spermatic cord on the right side was large. On the left, it rather deserved the name of the round ligament of the female.

On dissecting the parts within the pelvis, a well-formed but small uterus was found in its normal position between the bladder and rectum. It was supplied with but one Fallopian tube, which passed from its left cornu backwards and inwards, between the rectum and uterus, to the right side of the latter, where it terminated in a well-marked “corpus fimbriatum,” being permeable throughout its whole course.

The corpus fimbriatum rested on an ovary which, as well as the Fallopian tube, was single, no trace of a second being visible. Not far removed, however, from the ovary already mentioned, was observed a testis, pendulous into the true pelvis, in front of the right sacro-iliac synchondrosis, and immediately behind the internal iliac artery, as it descends into the pelvis. Applied to its anterior surface was seen the epididymis in a partially unravelled state, and the spermatic artery and vein were traced into close connection with it. The vas deferens was plainly seen emerging from the epididymis, and taking a remarkable course—at first, forwards and outwards, in the direction of the right

internal abdominal ring, to which it had reached about half way, when it turned back, forming a loop, with the convexity towards the ring: it then took its course inwards and somewhat backwards, in the direction of the uterus, to which it was finally conducted by the broad ligament of the right side. It could be traced into the substance of the uterus, into the cavity of which Dr. Banon proved that it opened by pressing mercury gently through it. Dr. Banon could not find any trace of *vesiculæ seminales*, nor of a second testicle. Dr. Banon here gave a minute description of his dissection of the different organs, and of the appearances of some of them under the microscope, which enabled him to speak with confidence of their identity. He then entered at some length into the discussion of the means of discriminating between the spurious forms of hermaphroditism and those which are entitled to be considered as a real blending together of the reproductive organs of both sexes, or the "true hermaphroditism;" and cited some remarkable cases, both in the human subject and the lower classes of animals, in which both forms had been observed. In the present instance, he came to the conclusion that it should be placed under the division of "true hermaphroditism," termed "lateral" by Professor Simpson. Dr. Banon also alluded to some of the most interesting of the physiological changes which take place in the earlier development of the embryo, and explained how an error of function at this period in the corpora Wolffiana, by which both the male and female reproductive organs, the testes and ovaries, are originally formed, would be likely to cause subsequent anomalies and malformations to appear. He also entered into the question—How far the conditions necessary for self-impregnation were present in the case of Andrew R.? And although he was obliged to admit that were the testis by any means so excited as to cause its secretion to pass through the vas deferens into the uterus, there was nothing to prevent the semen from proceeding farther, through the Fallopian tube, to the ovary; still, from the absence of the procreative elements (the spermatozoa) in the seminal fluid, as proved by the microscope, and also of the germinating elements of the ovary, self-impregnation in this instance could not have occurred. Dr. Banon concluded a highly interesting paper by stating that it was his intention to publish it in full, and bring it before the profession in a form rendered complete by the addition of lithographic plates of the drawings and casts which he had now the pleasure of exhibiting to the Society.—*Dublin Medical Press*, July 21, 1852.

5. *Absence of Sternum.* By Dr. BENJAMIN.—This was observed in a girl (aged 11) yet living. The true ribs are connected together on each side by a strong, narrow, cartilaginous band, the two bands being joined below by a commissure. Between them a space about as broad as the normal sternum exists, filled only with soft parts, and rising and falling with the systole and diastole of the heart. The thorax, deeply depressed where the sternum should be, is elsewhere much vaulted, and appears to be still more so than it really is, from a deep depression in the abdominal coverings, immediately under the commissure. At this spot there is a firm ligamentous mass, connecting the commissure and the false ribs together. The interclavicular ligaments and the anterior ligaments of the cartilages of the ribs are wanting; but the two cartilaginous bands impart to the thorax sufficient firmness, and allow of its mobility, although no movement of the anterior ends of the ribs on their axes can take place. The respiration is, however, but little impeded from this. The muscles of the thorax which have attachments to the sternum are, as far as can be ascertained, attached to the cartilaginous bands or their commissure. The heart is pushed towards the right side, and its apex beats between the fourth and fifth ribs. It is directly in contact with the skin in the space between the cartilaginous bands, and its pulsations, though not abnormal, are there visible. During deep inspirations, the skin in the sternal region is projected strongly forwards. The liver is felt high up under the thoracic parietes. During the first years of life the girl suffered from a difficulty of breathing, which has now ceased, except when she ascends stairs hastily. She is in good health, but not strong; and none of her four sisters have any organic defect.

Dr. Vaughan describes (in the *New York Med. Repository*, 1801) the dissection

of a child, aged 13, who from its birth had suffered from difficulty of breathing. The sternum was found absent, its place being supplied by a small connecting cartilage. The heart was very large, and the pericardium full of fluid. The liver extended into the mediastinum. Another case is related by Dr. Saske, in the *Oesterr. Med. Wochenschrift*, 1844, which refers to a man, aged 22, who had always enjoyed good health, and followed his occupation as a musician, notwithstanding the absence of the sternum. The ribs were connected by a cartilaginous border, a rudiment of the xiphoid cartilage alone existing. He did not apply on account of disease; but to be examined for exemption from military duties. Sümmering also met with a living man destitute of sternum. Wiedemann relates another example in his *Programma* upon the subject.—*Brit. and For. Med.-Chirurg. Rev.* from *Oppenheim's Zeitschrift*, Bd. lxiv. p. 91.

ORGANIC CHEMISTRY.

6. *Presence of a Free Acid in the Lungs.*—M. VERDEIL states that he has found in the parenchyma of the lungs of mammalia a distinct acid, which he has succeeded in obtaining in an isolated, perfectly pure, and crystallized condition. The tissue of the lung of an animal lately killed did not sensibly redden the blue turnsole paper. But when a mass of lung, cut up very fine, was macerated in warm water, it was found that the liquor possessed an acid reaction; which reaction became very manifest when the albumen and blood-globules which coloured the liquid were coagulated.

This acidity is stated to be owing to a free acid in solution, in the juices with which the lungs are impregnated. This substance is formed of carbon, hydrogen, azote, and oxygen, in definite proportion. It crystallizes in brilliant needles, strongly reflecting the light. It is somewhat soluble in cold water, nearly insoluble in cold alcohol, but more soluble in boiling alcohol. Boiling absolute alcohol dissolves a very small quantity only. It is completely insoluble in ether. It possesses an acid reaction, and expels the carbonic acid from carbonate of potash and soda. When heated to 140 degrees, it does not lose water of crystallization; at a higher temperature it crepitates, becomes opaque, and is decomposed, giving rise to empyreumatic products; it forms a carbonaceous mass, which disappears completely, leaving no trace.

The parenchyma of the lungs, therefore, contains a free acid. The author has also been able to prove that a portion of the acid which he extracted from the lungs existed in the tissue as a salt of soda.

In reflecting upon the probable use of this acid, he observes, that submitted to the general laws which govern chemical substances, it ought to decompose the alkaline carbonates carried by the blood; these, meeting in the lungs with the acid contained within the tissues, ought to form a new salt of soda, and carbonic acid should be set free.

The pulmonary vesicles constantly secrete this acid, which, coming in contact with the carbonate of soda brought by the capillaries, the acid combines with the soda of the carbonate; the carbonic acid becomes free and passes off in respiration. The new salt of soda returns in the blood where it was found, not free, but combined with the soda. This research was continued; all the characters of the acid and the phenomena of respiration concur to verify, not a theory, but the fact that an acid constantly secreted by the parietes of the pulmonary vesicles decomposes the carbonate of soda of the blood, and sets its carbonic acid free. This fact explains, amongst other physiological observations, the decomposition of the alkaline cyanurets and bicarbonates injected into the blood, when they arrive in the lungs, as M. Bernard has observed.—*Prov. Med. and Surg. Journ.* July 21, from *Gazette Médicale de Paris*.

7. *On the Gastric Juice of the Jackal.*—A large jackal having been killed near the Hymettus, Dr. LANDERER took the opportunity of examining the condition

of the gastric juice. He found in the stomach a small quantity of a very acid fluid, which turned the edge of the teeth, and effervesced with carbonates. As the chief constituents of this fluid, he found free muriatic acid, acid phosphate of lime, muriates, sulphates, an albuminous matter, colouring matter of the bile, and a fatty substance extractable by ether. As the digestive powers of this animal are so powerful, he experimented upon an artificial digestive fluid, formed by digesting the mucous membranes of the stomach in water, to which a few drops of muriatic acid had been added. The fluid thus obtained exerted a remarkably powerful effect on coagulated albumen, meat, and other articles of diet. Some of it administered to one of his pupils, who suffered from indigestion and flatulence after taking the lightest articles of food, enabled him to manage those of very indigestible quality with ease.—*Brit. and For. Med.-Chirurg. Rev. July, 1852, from Buchner's Report. Bd. viii.*

8. *On the Action of Ozone on Miasmata.*—M. SCHÖNBEIN's additional researches have still further developed the analogy of this substance to chlorine, and leave no doubt of the injurious effects it may exert on the respiratory organs when in excess. Mice soon perish in an atmosphere containing $\frac{1}{1000}$. The quantity which prevails in the atmosphere is very variable, being proportionate to the amount of electricity, and therefore at its maximum in winter, and its minimum in summer. It is, however, highly probable that, when existing only in minute quantities, it exerts a purifying effect on the atmosphere by destroying various deleterious miasmata. There are a great number of inorganic gaseous bodies, which, when diffused in scarcely appreciable quantities, yet render the air irrespirable—such as the gaseous compounds of hydrogen with selenium, sulphur, phosphorus, and arsenic—gases characterized by the facility with which they become oxidized. Ozone belongs to a class of bodies which, as agents of oxidation, rapidly destroy these hydrogenous compounds. An incessant source of miasmata exists in the variety of gaseous compounds which are incessantly liberated by the decomposition of the innumerable masses of organic beings which perish on the surface of our globe. Although the composition of most of these is unknown, it is to be supposed that their accumulation would render the air unfit for respiration. Nature has, however, provided the means of destroying such deleterious compounds as fast as they are generated, for M. Schönbein regards ozone, which is so constantly generated under electrical influence, and is so powerful an agent of oxidation, even at ordinary temperature, as specially destined to that end. His experiments prove that air containing $\frac{1}{1000}$ of ozone can disinfect 540 times its volume of air produced from highly putrid meat; or that air containing $\frac{1}{3240000}$ of ozone can disinfect an equal volume of air so corrupted. Such experiments show how little appreciable by weight miasmata may be, which are yet sensible to the smell, and how small is the proportion of ozone necessary for the destruction of all the miasmata produced by the putrefaction of organic matter, and diffused in the atmosphere.

We may admit that the electrical discharges which occur incessantly in different parts of the atmosphere, and determine there the formation of ozone, purify the air by ridding it of oxidizable miasmata. At the same time that these are destroyed by ozone, the organic miasmata cause its own disappearance, and prevent dangerous accumulation of it. The opinion that storms purify the air may not be without foundation, as a large quantity of ozone is then produced. In the author's experiments, he has always found a large proportion of ozone in the vicinity of the stormy clouds on the Jura; and air ozonized by phosphorus, for experiment, gives forth a similar smell to that perceived amidst storms in mountainous regions. It is very probable that, in certain localities, the balance between the ozone and the miasmata does not prevail, and disease may be the consequence. As a general rule, however, numerous experiments have shown that the air contains free ozone (though in very different proportions), so that no free oxidizable miasmata can there exist. M. Schönbein recommends that the atmosphere should be tested for ozone, in localities and at periods where fevers and other forms of disease prevail, so that the results of accumulated observations may be obtained.—*Brit. and For. Med.-Chi-*

rurg. Rev. July, 1852, from *Arch. des Sciences (Gendre)*, tom. xviii. and *Henle and Pfeufer*, N. S. Bd. i.

9. *On the Fats of Different Regions of the Body.*—M. LASSAIGNE, from a variety of examinations, concludes—1. That the fat of the same animal does not present the same composition in the different regions of the body in which it is deposited. 2. That the proportions of stearine and elaine differ in these fats. 3. That the point of fusion of fatty bodies extracted from animals is in general high, in proportion as the fat has been taken from around deep-seated organs. 4. That the quantity of stearine separable by the action of solvents is in an inverse proportion to the fusibility of such fats.—*Brit. and For. Med.-Chirurg. Rev.* July, 1852, from *Journ. de Chim. Med.* 1851.

MATERIA MEDICA AND PHARMACY.

10. *Physiological Action of Quinine.*—Professor J. H. BENNETT, in a clinical lecture (*Monthly Journ. Med. Sci.*, June, 1852), has made some interesting remarks on this subject. "The physiological effects produced by large doses of quinine are worthy," he remarks, "of observation. With these I became first familiar in the wards of M. Piorry, in La Pitié Hospital, Paris, during the year 1838. At that time quinine was given in enormous doses, with a view of cutting short intermittents, and diminishing the size of the spleen. In this way I frequently saw fifty grains of quinine and one hundred grains of salicine given in one dose, the administration of which was followed by the same effects you have observed to follow repeated doses of ten grains in the Royal Infirmary. In both cases the principal phenomena induced are vertigo, dizziness of vision, ringing in the ears, often complete deafness, with confusion of ideas, occasionally coma with contraction of the pupil. At the same time the force and frequency of the heart's contractions are diminished, and the pulse, from being 120, strong and full, was frequently reduced in a few hours to eighty beats, which were soft and even weak. The skin at the same time becomes cool and often moist from slight diaphoresis. This sedative action on the heart is apparently the result of the comatose condition produced by the primary action on the brain, as is proved by the fact that the disappearance of the cerebral, induces cessation of the circulatory phenomena. In large doses, therefore, quinine is a narcotic. Its action in intermittent fever, however, cannot be owing to this property. Of late years it has been called an antiperiodic, from the specific effects it exercises, not only on intermittents, but on all diseases which exhibit a tendency to return at periodic intervals, as certain cases of epilepsy, neuralgia, and even relapsing fever. This property is altogether peculiar, and is distinct from what ought to be understood by febrifuge, unless, indeed, the statements and views of Dr. Dundas should be subsequently confirmed.

Quinine is also spoken of as being a tonic when given in small doses. This property seems to have been attributed to it on account of its bitterness, as well as its remarkable effects in the cure of ague. But whether it increases the appetite, stimulates the digestive organs, or in any other way operates by increasing the tone of the system and improving the nutritive powers, is a circumstance which, though generally adopted as true, admits of strong doubt. If quinine be a sedative in large doses, it is the only one of that class of remedies which is tonic in small doses. No doubt it is very frequently given to convalescents and weakly persons, who get better under its use; but whether this is owing to the quinine, or would not have occurred equally well without it, is a matter very difficult to determine. Of one thing I am satisfied, namely, that it is far inferior in tonic properties to many metallic and other vegetable drugs, and, consequently, a medicine with such known valuable anti-periodic properties, the supply of which also is yearly diminishing, should not be wasted in

endeavouring to produce effects so very doubtful as the tonic virtues which have been ascribed to it. For many years, therefore, I have not given quinine as a tonic, and have yet to meet with a case where it is necessary to administer it in order to increase the strength of the system.

11. *External Use of the Nitrate of Lead.*—Dr. OGIER WARD was induced to make use of this preparation in cases accompanied by fetid discharges, observing its advantages as a disinfectant under other circumstances.

The first case in which he used it with this intention was that of a lady, whose lochia were so offensive as to scent the whole house, and nauseate even the nurse. It was used as an injection; and the third application effected the complete removal of the fætor.

He has also used it with success as a lotion for sore legs when in a sloughy and indolent condition, and finds that it soon restores them to a healthy state, inducing a proper secretion of pus, with firm granulations on the surface of the ulcer.

He has not used the nitrate in acute gonorrhœa, but states that it acts admirably as an astringent in gleet discharges, as well as in those of cancer uteri, whether sanious or purulent. In short, as a lotion it is as extensively useful as the diacetate of lead, while it is superior to that preparation by its disinfecting property.

In chronic cutaneous diseases he has seen the most remarkable instance of its efficacy in a case of eruption, of a kind of rupia or impetigo of five years' standing. The complaint broke out on the vertex of a woman, æt. 50, and, leaving its original site, it has gradually crept down over the forehead, nose, and cheeks, to the level of the mouth. The primary form of the eruption consisted of inflamed, flattened pustules, slightly elevated above the surrounding skin, which, discharging their contents, formed thick, rough, yellowish crusts, or scabs, fissured in all directions, like those of crusta lactea, which, firmly adhering and growing from their base, like rupia, for a longer or shorter time, fell off at last, leaving cicatrices of various shapes, exactly like the seams and pits of smallpox. The patient came under Dr. Ward's care some months ago, when he tried many remedies, both internal and external, in vain, quinine being the only one that produced any good effect, and this not permanently. As the skin around the sores and where they had healed seemed in a state of hypertrophy, the papillæ projecting in many places as in elephantiasis, it occurred to him that the best way to check the progress of the disease would be to apply some penetrating astringent to the surface; and with this view he ordered a lotion of the nitrate of lead, with quinine internally. In the course of a few days, the eruption ceased to make any progress, the crusts began to fall off, and the skin to lose its redness and swelling; and in a fortnight every sore was healed, though the face and forehead remained still seamed with scars. There has been no fresh breaking out for some weeks, though, as the nose is still red and swelled, he has ordered the continuance of the lotion.

The formula he generally uses is the following: R.—Plumbi carb. scr. j; Acid. nitr. dil. q. s. ad solvendum; Aquæ dist. ℥j. M. Fiat lotio bis terve indies assidue utenda.—*Prov. Med. and Surg. Journ.* Oct. 15, 1851.

12. *On the Use of Manganese as an Adjuvant to Iron.*—M. PÉTREQUIN, in an article in a recent No. of the *Bulletin de Thérapeutique*, quotes various authors to prove that manganese is a normal constituent of animal and vegetable tissues; and believes that wherever iron is present in appreciable quantity, manganese coexists with it. Hence iron alone will not always succeed in blood-diseases. M. Pétrequin has observed many cases of chlorosis, which have resisted iron as obstinately as anæmia connected with cancer or organic degeneration. Other cases, again, after deriving a certain amount of benefit from iron, remain stationary. Others, again, appear cured by iron, but the cure is not permanent. The remedy required in these cases, M. Pétrequin finds to be manganese. He does not give it or iron alone, but combines them.

It is especially in diseases of the blood that ferro-manganic medicines are useful. They have a special action on the vascular apparatus, on the formation

of the blood, and on the circulating fluid itself. They do not act merely as tonics or astringents; but are regenerators of the blood. They have succeeded admirably in anæmia following hemorrhage, operations, polypi, metrorrhagia, etc.; also in the chlorosis attending puberty, which is a more common disease than is generally supposed, and occurs even in males. M. Pétrequin has also frequently found the combinations of iron with manganese of benefit in the diseases of women at the critical period. He has often seen, in these subjects, *metrorrhagia*, accompanied with an aspect of the surface which would lead to the suspicion of organic uterine disease: the hemorrhage, however, was but a complication, and the patients, apparently in a hopeless state, have recovered under the use of ferro-manganic preparations, conjoined with tonics and ergotine.

In *amenorrhœa* and *dysmenorrhœa*, the patients often imagine that they require to be bled; but care must generally be taken not to comply with this request. M. Pétrequin has more than once seen cases of *amenorrhœa* with severe chlorosis, in which it has not been desirable to hasten the appearance of the catamenia—the consequent loss of blood aggravating the disease. The general state of health must here be carefully attended to. Edema of the lower limbs sometimes occurs in these cases; but it is a less severe complication than when it attends metrorrhagia. It often disappears, as the patient recovers, under the use of iron and manganese.

These medicines are no less efficacious in the treatment of *anæmia* resulting from prolonged intermittent fevers, prolonged suppuration, strumous, syphilitic, or cancerous affections, plithisis, etc. Pills and the syrup of the iodide of manganese and iron are preferable in these cases.

In all these cases, the ferro-manganic preparations do not merely act on the stomach and nervous system, but they are absorbed, and assist in the formation of hæmatosine and new blood-globules, so as to restore the blood to its normal condition. Their effect in this way is greater than that of iron alone.

In the *functional affections of the heart* connected with chlorosis and anæmia, and which must not be mistaken for organic disease, a combination of iron and manganese with digitalis and other moderators of the heart's action is advantageous. The same remark applies to the *functional disorders of the lungs*, attending the same constitutional states.

Disordered states of the nervous system are intimately connected with those of the blood. M. Pétrequin has found that the ferro-manganic preparations succeed well in these, even though uncomplicated with chlorosis. He, as well as M. Gubian, has observed that iron is here better tolerated when combined with manganese. He has also seen benefit from the use of iron with manganese in many cases of *dyspepsia*, *gastralgia*, and *gastro-enteralgia*. Nervous affections of the digestive organs are often the result of chlorosis: and, where stomachics and cinchona have failed, iron has often been found (especially the carbonate, by some English physicians) to be of service. Gastrodynia complicating chlorosis has often yielded to the use of ferro-manganiferous water, and to pills of carbonate of iron and manganese.

In *nervous affections connected with exhaustion* from venereal excesses, onanism, rapid growth, etc.; as well as in leucorrhœa, diabetes, etc., M. Pétrequin has a high opinion of these medicines. He is continuing his researches on their action in certain cases of sterility from asthenia, and in some hyposthenic affections of the scalp, such as early baldness, alopecia, etc.

M. Pétrequin has confined his observations to a limited number of the ferro-manganic preparations; and has made many observations before publishing the formulæ which he finds most useful. Having found, even at an early period, that the medicines were liable to adulteration, he has availed himself of the assistance of competent pharmacutists. Since the publication of his first memoir, in 1849, these medicines have been extensively used in the south of France, and in foreign countries.

The formulæ are few, and correspond to the preparations of iron generally used in France. They are: 1. *Pills* of carbonate of iron and manganese, or of iodide; 2. *Lozenges* of lactate of iron and manganese; 3. *Syrups* of lactate, or

of iodide of iron and manganese; 4. *Ferro-manganic chocolate*; 5. *Effervescing solution* of iron and manganese.

It has been observed that manganese not only preserves water, but purifies that which has undergone change (Martin-Lauzer). Ferro-manganic waters (of which there are many in France and other parts of the continent) can be preserved and carried to a distance;—which cannot generally be done with simple ferruginous waters.

M. Pétrequin commences by giving the powder of iron and manganese, with some vinous drink; he then administers two pills daily, one before breakfast and one before dinner, replacing them soon by the lozenges. The syrups and chocolate complete the treatment. He gives the medicines at meal-time. The syrup he gives before breakfast, in doses of a teaspoonful; and he finds it useful to administer directly after it some infusion of centaury, or of chamomile flowers and orange.

Large doses are unnecessary and useless; for they are liable to produce irritation of the stomach and exhaustion of the nervous system; and the reparation of the blood is slow and progressive, and cannot, even were it desirable, be effected rapidly. Besides, the iron and manganese are not absorbed in any greater quantity, if large doses are given.—*London Journ. Med.* Aug. 1852.

13. *Preparations of Manganese and Iron*.—M. BURIN-DUBUISSON of Lyons, who prepared most of the ferro-manganic combinations used by M. Pétrequin, has published an interesting *brochure*, in which he gives the necessary details relating to the subject. The following formulæ are extracted from it.

Powder for Effervescing Solution of Manganese and Iron. Take of coarsely powdered bicarbonate of soda 20 parts; tartaric acid 25 parts; powdered sugar 53 parts; finely powdered sulphate of iron $1\frac{1}{2}$ part; finely powdered sulphate of manganese, $\frac{3}{4}$ part; mix carefully, and keep in well stopped bottles. A teaspoonful is mixed with each glass of wine and water drunk during meal-time.

Pills of Carbonate of Iron and Manganese. Take of pure crystallized sulphate of iron 75 parts; pure crystallized sulphate of manganese 25 parts; crystallized carbonate of soda 120 parts; honey 60 parts; water a sufficient quantity. Pills of 20 centigrammes (3 grains) are made; they keep easily, without becoming oxidized, in well-closed vessels. From two to four are given daily.

Ferro-manganic Chocolate. One part of carbonate of iron and manganese is first mixed with four of sugar, and divided into large lozenges; of these, 100 parts (grammes) are mixed with 500 of chocolate paste, in the preparation of which 100 parts of sugar have been left out. This will make 800 lozenges, each of which contains about 3 centigrammes (nearly half a grain) of carbonate of iron and manganese. The chocolate decomposes the hydrated carbonate of manganese and iron of the saccharate into hydrated sesquioxide of iron and manganese: there is no metallic taste.

Syrup of Lactate of Iron and Manganese. Take of lactate of iron and manganese 4 parts; powdered sugar 16 parts; rub together, and add of distilled water 200 parts; dissolve rapidly, and pour into a matras over a water-bath, containing 384 parts of broken sugar: filter the solution. This syrup contains about 15 parts of lactate of iron and 5 of lactate of manganese in 3000 parts. One or two spoonfuls are taken daily.

Lozenges of Lactate of Iron and Manganese are made by adding 20 parts of the lactate to 400 of fine sugar, with a sufficient quantity of water. The mass will make 840 lozenges; of which six or eight are taken daily.

Syrup of Iodide of Iron and Manganese. M. Burin-Dubuisson forms a solution of iodide of iron and manganese, in the proportion of one part by weight to two of water: the proportion of the salts is about three of iodide of iron to one of iodide of manganese. Six parts of this are mixed with 294 of simple syrup; of this, M. Pétrequin gives one or two spoonfuls daily.

Pills of Iodide of Iron and Manganese. Take of the official solution prepared by M. Burin-Dubuisson, 16 parts (grammes); honey 5 parts; some absorbent powder $9\frac{1}{2}$ parts. Divide into 100 pills. The honey and the solution are first

mixed, and evaporated at first rapidly, then more slowly, to 10 parts. Then add the powder, and divide the mass into four parts, which must be rolled in powder of iron reduced by hydrogen; each of these must then be divided on an iron plate into 25 pills, and again rolled in the iron powder. Finally, they are covered with a layer of tolu, according to M. Blancard's process.

All these preparations must be made very carefully. M. Burin-Dubuisson has ascertained that the commercial salts of manganese frequently contain copper, and even arsenic; he hence insists on the necessity of calcining the sulphate of manganese, twice, or more frequently, at a dark red heat, and of carefully testing the solution.—*Ibid.*, from *Bul. de Thérap.* t. xlii.

14. *Absorption of Iodine from Ulcerated and Serous Surfaces.*—M. BONNET has arrived at the following conclusions from his investigations on the absorption of iodine:—

1. Iodine, when applied to ulcers, or injected into the cavities of abscesses or serous membranes, is absorbed, and is found in the urine and saliva. 2. This absorption and excretion may continue for several weeks without any affection of the general health. 3. This absorption and elimination produce a marked effect upon the system, and may effect remarkable benefit in constitutional scrofula, provided that the elimination of iodine by the urine, as shown by the deep blue colour produced with starch, be kept up for six weeks or two months. 4. Blistered and cauterized surfaces absorb iodine readily; and after daily dressing them, iodine may be found in the urine and saliva. 5. By the application of iodine to blistered surfaces at a distance from the eyes, scrofulous ophthalmia may be cured without internal remedies or local applications. Profound constitutional effects will be produced by applying iodine for several months after the moxa or cautery, so as the urine may always give a deep blue tint with starch and chlorine. 6. The only preparations of iodine which are constantly absorbed from ulcerated or blistered surfaces are the vapour and the ointment, made with thirty parts of lard, one of iodine, and two of iodide of potassium. This is especially preferable to the tincture of iodine. 7. The iodine may be detected in the urine and saliva by means of starch and hypochloride of soda; and the quantity may be judged of approximately by the intensity and persistence of the blue colour. 8. By the endermic method, not only the preparations of iodine, but also of hydrochlorate of ammonia, nitrate of potash, conium, etc., may be applied with more rapid and certain effect, than when they are applied to the sound skin.—*Lond. Journ. Med.* July, 1852, from *Gaz. Méd. de Paris*.

15. *Effects of the Prolonged and Excessive Use of Iodine.*—MR. LANGSTON PARKER states (*Provincial Med. and Surg. Journ.* Feb. 4, 1852) that he has seen numerous instances of what he considers the prolonged and excessive use of the preparations of iodine in constitutional syphilis, principally the iodides of potass and iron. The following are the cases which he recollects as most remarkable:—

“A surgeon, aged forty-seven, consulted me in the early part of this year for certain symptoms of an old venereal taint. He had taken, he informed me, ten grains of the iodide of potass twice or thrice a day, for ten years. There was no wasting of the testes. He had sarcocele, clearly venereal, with a small hydrocele on one side; the testis on the other was healthy, but there was hypertrophy of the tongue, which was tender, and covered with lobes or nodes, and fissured by deep cracks.

“I have seen this condition of the tongue so frequently in persons who have taken the iodide of potass for long periods, that I must consider it a pure chronic glossitis, produced by the continued use of this salt.

“A German gentleman, who had suffered from secondary syphilis for five years, and who had been treated by Ricord, Chelius, and others, was sent to me for my opinion as to the nature of the disease in his tongue. He had taken large quantities of iodide of potass for four years; ‘in fact (said he), I have taken so much iodine that my perspiration turns all my linen brown.’ The

tongue was tender, swollen, lobulated, and fissured by deep irregular cracks. The testes were of good size, and appeared perfectly healthy.

"In a third case, the patient had taken five grains of the iodide of potassium three times a day, for the greater part of three years.

"When this patient consulted me, he was emaciated and weak, and his appetite was totally gone. He at that time presented no symptoms of venereal taint, and attributed the whole of the indisposition under which he laboured to the prolonged use of the iodide. The testicles were healthy, and of full size.

"A gentleman who had suffered from a constitutional venereal taint for thirteen years, whose disease had resisted the usual methods of treatment, or returned when they were discontinued, was sent to me from town, to try my method of treatment by 'moist mercurial vapour.' He had taken large quantities of the iodide of potass for long periods. The tongue presented the appearance already described; it was in places hard and lobulated, in others fissured by deep cracks. The left testis had almost entirely disappeared; it was reduced to the size of a pea. The right was of full size, and healthy. Virility was not impaired.

"I have selected these four cases from amongst a mass of others, to furnish a reply to Mr. Gall's question; they are remarkable, from the large quantities of the iodide of potass which had been taken, and the length of time it had been continued. It is singular that three out of the four cases should present that peculiar condition of tongue, almost cancerous in its appearance, which I believe due to the use of the iodide. I never saw such a condition of tongue, however long a constitutional taint had been present (and I have treated cases of twenty-nine years' standing), unless the iodide of potass had been taken for a long period. The fourth is the only case I have seen where absorption of the testis appeared directly due to the use of the above-named salt."

16. *Guaraná*.—Communicated by D. RITCHIE, Surgeon, R. N. A medicinal substance named Guaraná was presented to me about two years ago by a Brazilian. The virtues which he asserted that it possessed induced me to employ it as a remedy in several troublesome and obstinate cases of disease. The consequent benefit was so decided that I was convinced of the great value it possessed as a remedial agent. This conviction, with the belief that it was still unknown, impelled me to bring the subject under the notice of the *profession* in this country. A short account of it was therefore transmitted to the editor of the *Edinburgh Monthly Medical Journal*, who forthwith submitted it to Professor Christison. To the kindness and extensive acquirements of this gentleman I am indebted for the information that the subject had already engaged the attention of the brothers Martius in Germany, and several French writers. It was a matter of satisfaction to me to find that the opinions I had expressed regarding the great prospective importance of this substance were fully borne out by all those who have diligently examined it.

As a knowledge of the properties and uses of guaraná appears to be still little diffused in this country, I shall consider that I am performing an acceptable service to the medical profession in placing before it an abstract of the more important facts that are known regarding this substance. Public attention was first directed to it by M. Gassicourt in 1817 (*Journal de Pharm.*, tom. iii. p. 259); but the merit of discovering the source whence it is derived, and of furnishing a more complete description of it, belongs to Von Martius, in the year 1826 (*Reise*, vol. ii. p. 1061, *et seq.*).

The term Guaraná is derived from the name of a tribe of Indians, who are dispersed between the rivers Parana and Uruguay, by whom it is very commonly used as a condiment or medicine. It is, however, more extensively prepared for commercial purposes by the Maubés, an Indian tribe in the province of Para and of Tapajoz, on the banks of the rivers Maubé, Maragnon, and Tapajoz. It is, according to Martius, prepared from the seeds of the *Paullinia sorbilis*, a species belonging to the natural family Sapindaceæ. The characters of the species are: *Glabra, caule erecto angulato, foliis pinnatis bijugis, foliolis oblongis, remote sinuato-obtusis-dentatis, lateralibus basi rotundatis, extimo basi cuneato, petiolo nudo angulato, racemis pubescentibus erectis, capsulis*

pyriformibus apteris rostratis, valvulis intus villosis. The seeds, which ripen in the months of October and November, are collected, taken out of their capsules, and exposed to the sun, so as to dry the arillus in which they are enveloped, that it may be more readily rubbed off by the fingers. They are now thrown upon a stone, or into a stone mortar, and reduced to powder, to which a little water is added, or which is exposed to the night dew, and then formed by kneading into a dough. In this condition, it is mixed with a few of the seeds entire or contused, and divided into masses, weighing each about a pound, which are rolled into cylindrical or spherical forms. These are dried by the sun or by the fire, and become so hard as to be broken with difficulty. Their surface is uneven, brown, or sometimes black, from the smoke to which they have been subjected; their fractured surface is conchoidal, unequal, and resinoid; colour reddish-brown, resembling chocolate. This is the guaraná, and in this condition, or reduced to powder, it is kept for use, or carried to market. The Museum of the Edinburgh College of Physicians contains a specimen of it in each of these forms. As it is liable to be adulterated with cocoa or mandioca flour, it is of importance to be aware that the genuine article is distinguished by its greater hardness and density, and in that, when powdered, it does not assume a white colour, but a grayish-red tint.

A chemical analysis of this substance was first made by Theodore Martius, in 1826 (*Buchner's Répert. de Pharm.*, xxxi. 1829, p. 270). He found it to consist of a matter (tannin?) which iron precipitated green, resin, a fat green oil, gum, starch, vegetable fibre, and a white, bitter crystalline product, to which the efficacy of the medicine was principally owing, and which he named Guaranine. This he believed to be distinct from, but allied to, theine and caffeine, and to possess the following elementary constituents: C_8, H_{10}, O_2, N_4 .

Another very careful analysis of guaraná was made in the year 1840 by MM. Berthémot and Dechastélas (*Journal de Pharmacie*, tom. xxvi. p. 518, *et seq.*), which varies in some degree from the preceding. They found the matter, which was considered to be resin by Martius, a combination of tannin with guaranine, existing in a form insoluble in water or ether. They also determined the perfect identity of the crystalline matter with caffeine. It is found to exist in a much larger proportion in the fruits of the Paullinia than in any of the plants from which it has hitherto been extracted. Alcohol is the only agent which completely removes it from the guaraná. To this solution the addition of lime or hydrated oxide of lead gives, on the one hand, the insoluble tannates, and on the other the crystalline matter.

The medicinal virtues of this substance have been attentively examined by Theodore Martius (*Op. cit.*), and more particularly by Dr. Gavrelle (sur une nouvelle substance médicinale, etc.: Paris, 1840), who employed it very often while in Brazil, as physician to Don Pedro, and afterwards in France. By both it is considered a very valuable remedy, and an important addition to the *Materia Medica*. By the vulgar it is held to be stomachic, antifebrile, and aphrodisiac; is used in dysentery, diarrhoea, retention of urine, and various other affections. It stimulates, and at the same time soothes, the gastric system of nerves. It reduces the excited sensibility of the coeliac plexus, thereby diminishing febrile action, and strengthening the stomach and intestines, particularly restraining excessive mucous discharges, increasing the action of the heart and arteries, and promoting diaphoresis. It is therefore indicated as a valuable remedy in fevers, or reduced vital power resulting from cold or prolonged wetness, grief, too great muscular exertion, depression of spirits, long watching, and also in colic, flatulence, anorexia, nervous hemiparesis, or in a dry condition of the skin. It is contraindicated in a plethoric or loaded condition of the abdominal viscera, and when there exists determination of blood to the head. It is said to increase the venereal appetite, but to diminish the fecundating power.

In cases where irritation of the urethra or urinary bladder succeeds venereal or attends organic disease, it exerts a most salutary effect in soothing the irritability of the mucous membrane, relieving the nervous prostration which accompanies these affections, and exalting vital power. Unlike the disagreeable remedies which are generally, and often without success, employed in these

affections, it is taken with pleasure, and with an amount of success which, as far as my experience extends, is universal.

If we examine guaraná according to its chemical characters, it must be regarded as a most valuable substance, from its possessing in so great a proportion that important nitrogenous principle guaranine. This, if not identical with caffeine, is at least analogous to it, and to theine, and theobromine—all important elements of food and grateful stimulants. From its chemical constitution, then, we may predict with great certainty its physiological action as being powerfully tonic: but, in the combination in which it is found, experience indicates that it possesses conjoined more valuable properties than belong to the simple tonics. Its power of correcting generally the discharges, and restoring the normal vitality of the mucous membranes, must be viewed as one of these.

Guaraná, in the state of powder, is exhibited in doses of \mathfrak{zj} , three or four times daily, mixed with water and sugar, or with syrup and mucilage, conjoined with an aromatic, as cinnamon, vanilla, or chocolate. A convenient form is that of extract, obtained by treating the guaraná with alcohol, and evaporating to the consistence of pills. This may be exhibited in the form of solution or pills. The Brazilians, however, use the powder with sugar and water alone, and consider this draught grateful and refreshing.—*Monthly Journ. Med. Sci.*, May, 1852.

17. *Neat's-foot Oil as an Occasional Substitute for Cod-liver Oil*.—Dr. C. R. HALL states (*London Journ. of Med.*, July, 1852) that, in some cases where the cod-liver oil disagrees with the patient, he has found the neat's-foot oil to agree. "Taken," he says, "in the same way, in the same dose, and with the same precautions as the other, it does not remind the patient of its presence after being swallowed. At first, it commonly acts very gently on the bowels, evincing this rather by softening the evacuations and maintaining their habitual regularity, than by increasing their frequency. In some cases of chronic diarrhœa, when the oil has been given in conjunction with tannin, or with nitric acid and opium, the bowels have become less irritable under its exhibition. In other cases of diarrhœa, the oil has appeared slightly to increase the disturbance. Pains in the chest have improved, the subcrepitant rhonchus at the apex has cleared up, under such circumstances as to give me the impression that the oil had ministered to the result, whilst the general improvement in condition has equalled what we customarily see from the cod-liver oil when it agrees.

"The neat's-foot oil has also proved of service in simple bronchitis, not connected with tubercle, after the acute stage has passed; in overcoming habitual constipation; in allaying the irritation of hemorrhoids; and, in general terms, in improving the condition of children who, without manifest ailment, remain too thin, notwithstanding judicious management of their regimen.

"In regard to its aperient effect, however, the neat's-foot oil is somewhat uncertain. Usually, as already stated, it at first produces very slight action of the bowels, and then maintains them in a state of regularity. But sometimes it fails to do this, and aperients are required to be superadded. On the other hand, in young children, and in some adults, whose bowels were irritable, a relaxed state has ensued after the oil has been taken alone for a few days. In no instance has it appeared to irritate the mucous membrane, or to produce griping. If there is no diarrhœa, the oil may be expected to promote regularity of the bowels, and nothing more. If there is diarrhœa, or the tendency to it, the oil need not on that account be avoided. The conjoint administration of any suitable astringent will enable the oil to be taken with advantage in the majority of cases.

"The cod-liver oil, in a few instances, produces an herpetic eruption about the mouth, very trifling in extent, and a sore state of the tongue. So far I have not observed such effects from the neat's-foot oil. But as they usually occur in summer, I have not yet had a sufficient opportunity of judging. Neither is my experience at present at all sufficient to allow me to draw any comparison between the cod-liver and the neat's-foot oils, in point of ultimate efficacy, where both agree with the patient. I would by no means therefore advise the sub-

stitution of the latter, where the former has been habitually taken without inconvenience. There is one exception; when the bowels have been habitually constipated, I have replaced the cod-liver oil by the other with advantage.

"As we should anticipate, there are certain of the more acute cases of phthisis in which the neat's-foot oil (like the cod-liver oil, when it can be taken), proves of no avail in checking the softening of the lung or its attendant emaciation.

"The oil of the skate has been supposed with some patients to agree better than the cod-liver oil. I have tried it only twice; in neither case did it agree. The principal claim of neat's-foot oil to attention, therefore, rests upon this, that it will frequently agree with the digestive organs, where the fish oils will not.

"There is at present some difficulty in obtaining the genuine neat's-foot oil. From the butchers, it is obtained too much mixed with impurities; from many druggists, mixed with so called nut oil; from some, too refined, having had almost all its stearine removed. In this so styled *very pure* form, I find it disagrees with the stomach. In this, as in the cod-liver oil, and, probably, all other animal oils, a large proportion of stearine promotes the digestibility of the oil. The suitable kind of neat's-foot oil is that which is merely freed from foreign particles, yellowish brown in colour, and opaque and thick with stearine, like honey not over clear."

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

18. *General Treatment of Continued Fever.*—Professor BENNETT, in a clinical lecture (*Monthly Journ. Med. Sci.*, June, 1852), says: "That the general treatment of continued fever which he has found most useful consists, during the stage of excitement, of giving saline antimonials, administering slight laxatives if occasion require them, and ordering the head to be shaved and cold applied. Wine and stimulants are required at a later period when the pulse becomes weak. In prolonged cases, the effect of pressure on the skin from decubitus must be carefully guarded against, whilst the different complications which arise will require careful management.

Salines and Laxatives.—At an early period of the disease, when the skin is hot and the pulse rapid and strong, the saline mixture generally ordered is the following: R. Sol. tart. antim. ζ ss; sol. ammon. acet. ζ ij; aquæ ζ vss; M. ft. mist., of which a tablespoonful is to be taken every four hours. Should a laxative or purgative be required, castor-oil is the one usually employed. Water or thin lemonade may be taken *ad libitum*.

Cold to the Head.—The oppressive headache of fever is greatly alleviated by cold applications to the head. Indeed, none but those who have experienced it can understand the feeling of relief and grateful sensation of ease which is in this way produced. The best method of applying cold I have found to be as follows: A wash-hand basin should be placed under the ear on one side, and the head allowed to fall over the vessel by bending the neck over its edge. Then from a ewer a stream of cold water should be poured gently over the occiput, and so directed that it may be collected in the basin, care being taken not to wet the dress or bedclothes. It should be continued as long as it is agreeable to the patient, and repeated frequently. In hospitals, and more especially in fever-wards, this method requires too much attendance. You will have observed, indeed, that I seldom ordered cold to the head, experience having taught me that it was more frequently converted into warmth to the head. For, notwithstanding every injunction to the contrary, all that is done in these cases is to moisten a piece of double rag or lint in cold water, and lay it upon the warm head of the patient. In a few seconds it is converted into a warm and steaming fomentation, and too frequently allowed to remain in this condi-

tion for hours. Hence, unless cold can be applied properly (and in large hospitals that can scarcely be expected without procuring a nurse for every two or three patients), it is better not to order it at all. It has occurred to me, however, that a water-pipe might be conveyed round the walls of fever-wards, with a vulcanized india-rubber tube and stopcock attached, so that with a little contrivance the patients might procure a flow of cold water and regulate it for themselves. I am satisfied that much relief would be in this way obtained.

To secure the application of cold efficiently, it is necessary that the head be shaved. In all severe cases this is indispensable. Such practice, however, is often stoutly opposed by the friends of young women, who are unwilling that they should lose a handsome growth of hair. I have occasionally compromised the matter by allowing the long hair to float in cold water, and act by capillary attraction on the scalp, so as to keep up a refreshing feeling of coolness.

Wine and Stimulants.—When, after being rapid and strong, the pulse falters, becomes soft and weak, very often without losing its frequency, it will become necessary to administer wine or other stimulants. The quantity of wine usually given is from three to six ounces a day; but in some cases marked by unusual depression, or when the individual has been previously accustomed to alcoholic drinks, a larger quantity, or, instead, from one to four ounces of spirits may be required. Nothing is more difficult than to lay down rules as to the extent to which stimulants ought to be given in certain cases, or as to the period when they should be administered. The pulse, strength of constitution, previous habits of the patient, but, above all, the type of the prevailing epidemic, must be your chief guides. Nothing, perhaps, is more indicative of experience and practical tact in the treatment of fever than the judicious use of stimulants in this disease, and certainly there is no other method of acquiring the necessary knowledge than that of carefully watching their effects in a large number of patients. Among all the agents at your command, there are none which will enable you to conduct a case of fever to a favourable termination more successfully than stimulants, when properly managed. Indeed, it is easy to conceive that in a disease where loss of appetite, and abstinence from food, constitute essential phenomena, a period must arrive, sooner or later, when artificial support is absolutely required. You should be careful, however, not to prolong their use more than is necessary. Very singular anecdotes still linger about the clerks' rooms of this infirmary of instances where whole bottles of whisky were consumed daily by fever patients; and where, notwithstanding their recovery, owing to some mistake in the order-book, the whisky was still supplied, and disappeared with surprising regularity.

Regulation of the Diet.—During the early period of fever, the patient generally loathes all kind of food. Care should be taken, however, that, after a few days have elapsed, slight nourishment should be taken in the form of drink, and diluted milk, toast and water, thin panada or similar fluids given, with a little toast or biscuit. Should collapse come on, pains should be taken that, together with the stimulants, chicken broth or good strong beef-tea should be administered. I am inclined to think that the danger from fever is not from over, but from under, nourishment, which, by reducing the strength, leaves the patient less capable of struggling with the subsequent collapse. I have especially noticed, with regard to relapsing fever, that those who have fed well in the interval have been less affected by the re-accession. The body is also drained of its saline constituents, whilst such as enter with the food are cut off; hence I have found it useful to add a large amount of common salt to the beef-tea, which also renders it more sapid and agreeable to the patient, and serves to clear away the accumulation of fur and sordes that gather about the mouth. On the other hand, when convalescence comes on, we should take care not to indulge the appetite too much.

With regard to the complications of fever, I have nothing further to say than that they must be treated according to general principles, always keeping in remembrance that active depleting means are never useful, and seldom fail, by diminishing the vital powers, to augment the collapse and increase the danger."

19. *Treatment of Continued Fever by Quinine.*—Dr. DUNDAS, in a paper published in the *Medical Times* for October 4, 1851, extols the efficacy of large doses of quinine (ten or twelve grains, repeated at intervals not exceeding two hours), in the treatment of continued fever. "Three or four of these doses will be," he says, "in general, sufficient to exert the specific influence of the medicine, which is displayed by dizziness of the head, tinnitus aurium, or in the rapid subsidence of all the urgent symptoms. In the great majority of cases of uncomplicated typhus, taken at the commencement, complete and rapid cures may be effected by this treatment."

In a subsequent paper (*Lond. Journ. Med.* Dec. 1851), Dr. D. has made some further remarks on the subject, and avers "that quinine will *generally* cure every case of typhus fever curable by medicine, including a large number of those who would sink under any other form of treatment;" and he adduces the testimony of several practitioners, who have tried the practice, in its favour.

Dr. Dundas, it should be remarked, considers the remittent and intermittent fevers of the tropics, and typhoid and typhus fevers as identical.

The boldness with which Dr. D. vaunted the efficacy of quinine in continued fevers has induced several practitioners to try it, and we do not find that their results, generally, to confirm the promises held out.

Professor BENNETT, who tried it in the Royal Infirmary, Edinburgh, remarks, in a clinical lecture (*Monthly Journ. Med. Sci.*, June, 1852): "With regard to cutting short continued fever by quinine, as contended for by Dr. Dundas, I regret to say that the trial you have seen made of it has entirely failed. In none of the seven cases in which it was given, notwithstanding the physiological action of the drug was well marked, did it in any way cut short the disease, or produce on its progress, so far as I could ascertain, any amelioration whatever. On the other hand, it may be argued that in one case (Case IX.), it was injurious, by increasing the cerebral complication. Dr. Christison has also tried it in one case, and Dr. Robertson in eight cases, also with a want of success. Thus, in sixteen cases it has been carefully and energetically tried, with uniform failure in all."

At a meeting of the Edinburgh Medico-Chirurgical Society, Dr. CHRISTISON said that, on lately taking his turn of duty as clinical professor, although he understood from Dr. Bennett that Dr. Dundas's treatment had been tried by him in several cases without success, he resolved to make trial of it also in conformity with a promise made to Dr. Dundas. The first suitable case for the experiment was that of a girl of fourteen, who, while a patient in the clinical ward, had caught fever apparently from having been allowed by the nurse to be in constant close communication with another girl convalescing from simple spotted typhus. An eruption, persistent on pressure, appeared on the fifth day; and the other symptoms of simple typhus were characteristically exhibited. On that day five eight-grain doses of sulphate of quina were given every two hours; and next day these doses were repeated. The only discoverable effect was some increase of a habitual deafness. No amelioration whatever ensued, and no reduction of the pulse. Twenty-four hours after the quina was abandoned a temporary amendment took place, as is not unfrequently observed after the close of the first week. But at the same time diarrhoea set in; the eruption disappeared on pressure; the other symptoms also put on the character of enteric typhus; and at the present moment the patient is moribund, in the fifth week of fever. [She died in two days more. The feces had become solid for three days before death. The intestines did not present any appearance of *dothi-enteritis*.]

This case was no great encouragement to persevere. He was at a loss to account for the success of Dr. Dundas and others, and the total failure of the remedy here. Dr. Bennett had mentioned one source of fallacy. He might mention another. In the spring and autumn of last year, most of the cases of fever in the clinical wards put on the characters of simple typhus, sometimes in great intensity, and terminated by a gentle diaphoretic crisis, beginning on the eleventh, and ending on the fourteenth day. One of the worst cases he ever saw put on that form, and so ended favourably in the most unpromising circumstances. An epidemic, in which such cases occurred, would be a great

source of fallacy in the course of trials like those made by Dr. Dundas and others.

Dr. ROBERTSON stated that he had, since the 20th of January, been making a series of observations on the quinine treatment. He had treated in a male fever ward of the infirmary thirty-four cases of fever, whereof twenty-one were unmistakable examples of typhus. To eight of the twenty-one, quinine in ten-grain doses was given, in exact accordance with Dr. Dundas's directions. The treatment was commenced at all periods from the fifth or sixth to the tenth day of the disease. The quantity used in each case varied from 40 to 130 grains. It produced no appreciable good effect—did not cut short the fever in a single case—and, while it generally seemed to lower the pulse, sometimes caused cerebral excitement, followed by coma of a very alarming character. Dr. Robertson was convinced that, in cases of the Edinburgh typhus at least, the practice was useless, if not dangerous. True, the eight cases all recovered: but the epidemic at present was a mild one—for of thirty-four cases treated in the same ward during the last three months, one only had proved fatal.

Dr. MACLAGAN read an extract of a letter from his son, Dr. PHILIP MACLAGAN, surgeon of the 20th Regiment at Montreal, of date 13th December last, to the following effect: "We have a good deal of common fever. I have been trying to cure some of them by inducing *cinchonism*, certainly with very marked success, but the number is too small as yet to give any opinion on the system. But in cases apparently *parallel*, and lying side by side, the treatment by large repeated doses of quinine produced a rapid change, while under our ordinary *expectant* treatment the cases ran on in the common way."

The PRESIDENT remarked that he had not had any opportunity of testing the value of quinine as a febrifuge in typhus; but he had on many occasions witnessed its beneficial effects in the ordinary remittent fever of children. In such cases he had administered quinine early in the disease, when the tongue was loaded, the skin hot, and the pulse frequent; and had observed that, in such circumstances, without the aid of purgatives, or other antiphlogistics, cases which would have run the course of *ten* or more days had been cut short in *four* or *five*.

Dr. CHRISTISON and Dr. MACLAGAN also attested the utility of quinine in this disease; but Dr. MacLagan always employed purgatives in addition.

20. *Treatment of Rheumatic Pericarditis.* By J. RISON BENNETT, M.D.—The following is an abstract of a paper read at the Medical Society of London, upon a subject somewhat disputed at the present time. The author observed, that whatever opinion may be entertained as to the precise nature of acute rheumatism, it has been long and generally admitted that the articular inflammation has peculiarities which distinguish it from ordinary inflammation; and this conviction has very generally guided our treatment of the local affections, apart from other and more important considerations. When, however, a case of acute rheumatism has become complicated with local inflammation of internal organs, it has usually been the practice to treat these local internal inflammations much in the same way as if they had not occurred in connection with rheumatism. If, however, we look on them, not as exceptional or accidental complications, but as having a common origin with the external inflammation, it would be natural that our treatment should be guided by the same considerations which influence us in the local treatment of the arthritic affections. If the affections of the joints be but the local manifestations of a general disease of the system, or, in the phraseology of the day, of a blood disease, there is much reason for viewing the pericarditis and pleuritis, which are so apt to supervene, in the same light. And thus if, in reference to the relief of the articular pain, and tenderness, and swelling, we are guided by general considerations, and trust rather to constitutional remedies than to local measures, ought not the same considerations to guide us in the treatment of the local symptoms occurring in conjunction with the internal inflammations? It is, of course, readily granted that the vital importance of the heart, or even the pleura, is far greater than that of the knee or elbow-joint. There is an urgent necessity for speedy relief in the one case, which does not exist in the other. We

may be fully authorized in the use of means for the relief of the one, which, from general considerations, we may not be warranted in employing in the other. Still, if our general pathological views be correct, they should undoubtedly influence us most materially in our attempts to relieve even the most urgent symptoms connected with a vital organ. And, *à fortiori*, we should not be too hasty, in the slighter forms of these internal affections, in having recourse to remedies of questionable propriety as regards the general treatment of the disease. Dr. Bennett stated that it was not his purpose to offer any evidence in support of the view which considers acute rheumatism as a blood-disease, nor to attempt to define in what respects rheumatic differs from other forms of inflammation; but submitted that the commonly occurring internal inflammations are as much a part of acute rheumatism as the arthritis, and that the one as much as the other participates in the peculiarities, whatever they may be, of rheumatic inflammation. The profession, he said, was much indebted to Dr. John Taylor for his valuable investigations on the subject of pericarditis. His researches have fully shown the important relation that subsists between pericarditis and other blood diseases than rheumatism, and more especially Bright's disease. Putting rheumatism out of consideration, it was, he observed, a remarkable and most important consideration that pericarditis is a rare affection, except in connection with some blood disease; and his own observation, and he believed that of the profession at large, fully confirmed this important pathological fact, which, the more it was considered, the more would it be found to be pregnant with important practical results. It had, however, long been doubted whether the ordinary treatment of pericarditis was worthy of the confidence it generally received: and with reference to a leading part of the treatment, it is no new thing with the disciples of that profound pathologist and sagacious physician, Professor Alison, to question the efficacy of mercury in overcoming pericarditis. Towards the solution of this question, Dr. Taylor has afforded us much valuable information. It must, however, still be considered *sub judice*. But for its satisfactory determination it was important that it should not be mixed up with the questions of the value of mercury in the treatment either of inflammation in general or even of other serous inflammations. Here, as in many other instances, it is probable we have been misled by a general term, and by referring to the class inflammation what may be only true of some particular form. "At all events," said Dr. Bennett, "I am especially anxious to guard myself from being supposed to cast any doubt, or to offer any opinion, on the value of mercury in any other form of inflammation than that which is the subject of immediate consideration." For the present he begged to be allowed to consider simply the subject of rheumatic pericarditis, which he was willing to call by any other name, and offered the brief cases which he read as a small contribution towards the determination of a very important practical question, and as a peg on which the Society might hang not merely a discussion but additional materials. He did not intend, however, to limit the consideration of the Society to the utility of *mercury*, but to the treatment of *rheumatic pericarditis*, whether by mercury, depletion, or any other means.

Dr. Bennett then proceeded to give the histories of four cases of rheumatic pericarditis treated in the female ward of St. Thomas's Hospital, under his care. Lemon-juice was the constitutional remedy which had been relied on in all the cases, and with this he had for some time past treated almost all his hospital cases. In the first case admitted Nov. 6, and discharged Dec. 15, symptoms of disturbance of the nervous system, of the character of chorea, were the most prominent, and these came on with a friction-sound, and other signs of serous inflammation, probably involving both the pleura and pericardium. A purgative mixture (into which, however, colicium entered), to keep the bowels open, a sedative at night, and counter-irritation, comprised the treatment till the occurrence of symptoms indicative of increase of thoracic inflammation and nervous disturbance. For these symptoms ammonia and camphor mixture were had recourse to—the application of ten leeches once—cataplasms, and subsequently counter-irritation again. Neither general nor large local depletion was had recourse to, nor mercurialization. In answer to the objection

which some might urge, that this was a slight case of pericarditis, and that many such will do well without any special treatment, Dr. Bennett admitted that the slighter pains of pericarditis do not require nor justify active interference. But it would not be speaking correctly to call this a trifling case. Both local and general symptoms presented a formidable aspect of things, which, in the eyes of many, would have justified far more formidable measures than those which were had recourse to. The second case, admitted Nov. 6, and discharged Dec. 15, was a rheumatic subject, having had rheumatism four years previously. The strictly rheumatic symptoms were severe, and the cardiac symptoms well-marked, but ceded to a few leeches, aided by cataplasms and a moderate sedative at night. The third case, admitted Aug. 20, and discharged Oct. 4, presented all the more important symptoms and signs, both local and general, of pericarditis of the most acute and pronounced description. But as some mercury was taken in this case, and to the extent of ultimately affecting the gums, how far, it may be asked, was the recovery attributable to this remedy? In answer to this, it was to be observed: 1st. That four doses only, of four grains each, of mercury with chalk had been taken in the course of thirty-six hours, when the symptoms had so much improved that the pulse had fallen from 132 to 100, and the respirations from 40 to 32. 2d. That the slight tenderness of the gums did not occur till five days after the marked change for the better. 3d. That the signs of pericarditis of the most decided character had preceded the exhibition of mercury for many days, so that here was a case of well-marked pericarditis of many days' standing, which began to subside within thirty-six hours after a few doses of mercury had been taken, although the evidence of the constitutional action of that drug did not appear till five days subsequently. So far as this case goes, the utmost it says for mercury is, that it is sometimes useful as an adjunct, when *not* given so as to produce speedily and fully its constitutional effects. In this case it should be observed, that, though mercury was given, *no depletion* was employed after the patient's entrance into the hospital. The fourth case, admitted Sept. 30, and discharged Nov. 22, was a very severe and most unpromising case from the first, simply as a case of uncomplicated acute rheumatism, and when thoracic complication set in, the local symptoms were well pronounced, and associated with much distress; impeded respiration; faintness; cough; and a very rapid and feeble pulse. As regards the general character of the case, simply as one of acute rheumatism, all practical men will at once recognize the class of case by the leading symptoms present on her entrance into the hospital: the anxious, depressed look, with dirty, half-lurid colour of the face; a furred tongue, with persistent, rough, dry edges, and tip resembling the strawberry-tongue of a bad case of scarlatina; frequent purging of liquid, dark, foul matters, and equally offensive, sour sweatings; a pulse of 130, and the arthritic symptoms severe. What probability was there that such a case would have borne and been benefited by active antiphlogistic or mercurial treatment for the quelling of the local disturbance which subsequently occurred? or does not experience lead us to say that such a case would very probably have sunk under the combined depressing influence of the remedies and the disease, either immediately or at a later period, with sloughing sores of the back, and colliquative diarrhoea? At all events, this case showed what may be effected by a dozen leeches, with cataplasms and opiates, without any mercury, as the last showed what might be done without any depletion. In conclusion, Dr. Bennett observed that he might have brought forward many other examples of the same kind of treatment, which had proved equally satisfactory. In all the four cases related, the patients had left the hospital either without a trace of any cardiac disease, or with merely a slight systolic bruit present during excitement, and which was daily diminishing. His object had been to submit to the Society the non-necessity in a large proportion of cases, and in others the absolute impropriety, of attacking rheumatic pericarditis, either with large depletion, whether local or general, or with mercury so as to affect the system. He was by no means prepared to recommend the abandonment of mercury altogether, but he was quite satisfied that in many cases of acute rheumatism the system could not be brought under the full influence of mercury without very

materially increasing the danger. On the other hand, if we were satisfied with the general constitutional remedies that we were employing, if they were telling on the ordinary symptoms and on the general fever, there was every reason for trusting to such constitutional means, aided by the simplest and least possibly disturbing local means, when the internal sero-fibrous membranes became inflamed.—*Lancet*, 1851.

21. *Rapid Cure of Itch*.—M. HARDY states that by the modification which he has introduced into the mode of treating the itch at St. Louis, he is now enabled to definitively cure a patient in *two hours*, so that it is in contemplation to treat all patients suffering under this disease as out-patients. The entire body is first thoroughly rubbed for half an hour with soft-soap, which has the effect of breaking up some of the furrows in which the acari are lodged. A tepid bath is next employed for one hour, in order to soften the epidermis, the patient continuing to wash himself well while in it. Finally, the patients rub each other thoroughly for half an hour over the entire surface with the sulphur ointment (lard 8 parts, sulphur 2, subc. potass 1), and the itch is cured. The various secondary eruptions, formerly confounded with the itch, may require several days for their dispersion, by means of simple baths. In 4 only out of 400 cases so treated, have relapses occurred, and 144 cases out of 145 occurring in June were so cured. In this way the disease spreads by contagion much less than heretofore, when the patients had to wait until they could obtain admission into the hospital.

In a recent paper, however, M. DEVERGIE expresses an opinion that this rapid cure of a disease which has often been long persistent, is a practice not to be followed, as being dangerous to present or future health. In certain forms of itch the secretion is abundant, and when the disease has been mistaken, this may increase, so as to form a kind of purulent emunctory not to be at once destroyed with impunity. It is probable that some of the internal abscesses, which have been observed in cases of this disease, have arisen from its repercussion; and certainly in no other form of pustular eruption would the practitioner thus act. The itching or pruritus which is produced is not entirely an indifferent matter, and the habit of nocturnal scratching must not be suddenly suppressed. Even when pedicular disease or prurigo is suddenly arrested, dangerous pulmonary congestion sometimes occurs, requiring active rubefacients, although here little or no secretion has been suppressed. A single gentle friction suffices to destroy the contagious property, and it is best to complete the cure by repeating such for five or six days, than to run the risk, by too violent friction with very strong ointments, of producing the too sudden repression, or of exciting various forms of eczematous or lichenoid eruptions, which are sometimes more difficult to cure than the original disease, especially among the working classes, who are so apt to neglect the condition of their skin.—*Brit. and For. Med.-Chirurgy. Rev.*, from *L'Union Med.* 1851, No. 95.

22. *Treatment of Hemicrania and Facial Neuralgia*.—M. CAZENAVE informs us (*Revue Médico-Chirurgicale*) that he has had marked success in removing the pains of hemicrania and facial neuralgia by means of the following pomade:—Pure chloroform ʒiv; Cyanide of potassium ʒiijss; Axunge ʒiij; Wax sufficient to give consistence.

M. Cazenave professes to have tried the cyanide of potassium alone, without any benefit, and therefore concludes that it is this particular combination which is so valuable. The mode of using it is to rub ointment, the size of a pigeon's egg, into the scalp, and after which the head is to be covered with an oiled-silk cap. The inunction is to be repeated according to circumstances. In facial neuralgia it is rubbed in over the affected nerve.—*Prov. Med. and Surg. Journ.* July 21, 1852.

23. *Employment of Oxygenated Water in Asphyxia*. By M. RUPINI.—In a recent series of experiments upon the effect exerted by various gaseous bodies upon the contractility of the heart of the frog, MM. Polli and Broglia have especially drawn the attention of practitioners to the stimulating effect of oxy-

gen gas in asphyxia; and to the feasibility of employing injections of oxygenated water when the respiratory organs can no longer perform their functions. M. Ruspini, of Bergamo, recently in part carried out these views in treating a case of asphyxia from charcoal vapour, in which a slight degree of animal heat constituted the only remaining sign of life. He caused some oxygen to be disengaged from a flask of oxygenated water, and, this having been respired, and a little of the oxygenated water poured down the throat, animation became speedily restored.—*Brit. and For. Med.-Chirurg. Rev.* July, 1852, from *Journ. de Chem. Med.* 1852, No. 4.

24. *Internal Administration of Chloroform in Delirium Tremens.*—R. II. BUTCHER relates (*Dublin Medical Press*, August 4, 1852) a very aggravated case of delirium tremens treated most successfully in Mereer's Hospital by the internal administration of large doses of chloroform. Mr. B. states that he thought that he was the first who tried the remedy in Great Britain, but he learns that Dr. Neligan employed it some months before. "The practice, however," he remarks, "comes recommended from America (*American Journal of the Medical Sciences*, January, 1852), and so far as a single case can speak, mine confirms the favourable report given of it, and still further goes widely to proclaim the powerful agency of the medicine over this inexplicable derangement of the nervous system.

"William Magrath, aged 26, a powerful young man, by trade a wine-porter, was admitted into Mereer's Hospital, June 25, 1852. During the last four years he has been in the habit of consuming large quantities of spirits of various kinds—wine, whisky, porter, &c., seldom to that extent as to produce stupid intoxication, but constantly keeping up for days together a state of the greatest nervous excitement. A day scarcely ever elapsed without a large quantity of stimulus being taken. About a fortnight before his admission, he commenced to drink more freely than before, and, as I am informed by his wife, came home drunk every night for a week. He then, through the interposition of friends, was arrested in this career, and promised to abstain from ardent spirits altogether. His stomach became very irritable; nothing in the way of food would rest upon it. He was depressed and melancholy, and sunk into a state of temporary inaction or collapse. This condition did not last for more than forty-eight hours, when violent reaction of the nervous and vascular system were fully established. Medical assistance was sought, but no medicine would stay upon the stomach, so that the symptoms gained ground. When such was found to be the case, the patient's friends had him removed to the hospital. When admitted, four days had elapsed from the time of his giving up the stimulus, and he had no sleep during that period. A train of symptoms consonant with the highest nervous irritation were present. His countenance was particularly anxious, with a wild expression; the pathognomonic symptom, tremor of the hands and tongue, fully established. His speech was hurried and uneven: he was quite irrational and wild, constantly looking around, apprehensive of some imaginary danger; pulse 120; surface of the body hot and burning, while his face was covered with perspiration, and his hair drenched in sweat. He was put into bed, but would not remain quiet, got up, and kept constantly walking up and down the ward and corridor. He was ordered two grains of calomel and a grain of opium in pill, to be taken every third hour. He had taken three, but each was vomited almost immediately after being swallowed. I then tried morphia in combination with creosote and camphor; a grain of morphia, two drops of creosote, and an ounce of camphor mixture, given every third hour. The draughts were likewise rejected. If the patient only took a sup of cold water to moisten his parched mouth and lips, it was instantly vomited.

"On the following morning, the 26th, his condition was a great deal worse. He never stopped quiet for a moment, from the time of his admission at 10 o'clock on the previous morning up to this time, a period of twenty-four hours. He was walking about all night with a keeper in attendance. His countenance was more wild; the eyes starting from his head: he was more delirious and more haunted with illusory apprehensions of a frightful nature; the tremor of

the tongue was greatly increased, and now the lower extremities participated in it more violently than the upper.

"The case at this period was a very serious one. From the irritability of the stomach, opium in any form could not be got to rest upon it. As for the idea of administering repeated, small opiate enemata in this powerful, restless, and uncontrollable young man, the practicability of it could not be entertained for a moment, though sanctioned by the high authority of Dupuytren. It may be said the object could be attained by force, but that I could not sanction. All through, it may be observed, I permitted the man to walk about the ward at will, closely watched. I have the greatest possible aversion to restraint in this disease. (I separate altogether from the present question the treatment of traumatic delirium after fractures.) I have seen a man in delirium tremens, from being held down and overpowered, thrown into epileptic convulsions, and I have seen a man die exhausted from ineffectual efforts to shake off and liberate himself from the strait waistcoat. From the satisfactory issue of the two cases reported in the periodical already referred to, I determined on a like practice—the internal administration of chloroform.

"At 10 o'clock this morning (26th), I administered one drachm of pure chloroform in two ounces and a half of water. In an hour after swallowing it, the patient became comparatively tranquil, and could be persuaded to lie in bed. When in the recumbent posture, the spastic short contractions of the muscles of the lower extremities, as well as those of the upper, were as marked as in the erect position.

"11 o'clock. He began to get drowsy, and slept for periods of ten and twelve minutes at a time. At a quarter before one o'clock, he became fully affected by the medicine, and fell into a quiet steady sleep; and on visiting him at two and four P. M., he was still in profound sleep, and continued so until seven in the evening. During this long sleep of six hours, he was calm and quiet, his pulse fell from 120, which it was in the morning, to 96, at which it remained; his respirations were between 16 and 20 in the minute, and not louder than natural; the temperature of the body was exalted. All along heat was maintained to the feet, and a pure current of air circulating around him, the windows being kept open. On his awakening, he was nearly quite sensible, and I took advantage of this pause to administer a full stimulant cathartic, consisting of six grains of calomel and ten of camphor, not only with the intention of freeing the bowels of accumulated matter, but likewise to guard against congestion of the brain. Orders were left in case he should not sleep before ten, to administer half a drachm of chloroform in two ounces of camphor mixture.

"27th, 10 A. M. The patient went to sleep almost immediately after swallowing the bolus on last evening, so he did not require the chloroform draught. His bowels were opened three times very freely during the night, and his condition is in every way greatly improved. He is quite rational, and answers every question sensibly; his pulse 96, considerable volume; skin cool; after being interrogated, he quietly turned on his side, and went to sleep.

"3 P. M. His bowels have been several times opened since morning, yet his pulse has risen to 110; the temperature of the body is also increased; he is hot and burning; altogether he is excited, and the fear of horrible objects around him has returned. On the presence of these symptoms, I at once repeated the full chloroform draught. Shortly after, he took a large drink of tea, which was inadvertently left beside his bed, which produced vomiting immediately; however, I was satisfied to let him remain without any further medicine until evening.

"9 P. M. Since my last visit the patient has slept, at short intervals, for one and two hours at a time; pulse still up to 110. Ordered the chloroform draught, one drachm, to two ounces and a half of camphor mixture, to be repeated.

"28th. After the patient had taken the draught last night, he fell into quiet sleep, which continued uninterrupted until eight o'clock this morning. He awoke quite collected and rational; his pulse 80; skin cool; his tongue and extremities quite free from tremor, and he feels in every respect well; his appetite has returned, and all food is retained on the stomach. Ordered a grain of morphia, in an ounce of camphor mixture, to be given at night.

"29th. This morning the patient is quite restored; he is sitting up eating his breakfast heartily in bed; in short, he is quite convalescent, and only requires a little nourishment to remove the debility consequent upon so severe a struggle.

"In reference to the administration of the chloroform in the foregoing case, there is one point which solicits our closest attention—namely, the remarkable lowering of the pulse, when the perfect effect of the medicine was produced; the pulse, in fact, might form the index to direct the practitioner as to the propriety of a repetition of the dose. Again, as a precautionary measure, I consider it desirable to keep heat to the feet, and a current of pure air circulating around the bed and through the apartment in which the patient lies."

A second case treated, but unsuccessfully, in Mercer's Hospital by Wm. TAGERT, Esq., is reported in the *Medical Times* (Aug. 14, 1852). Mr. T. says that he "was induced to give this powerful agent an early trial, from having read a most flattering account of its success in two aggravated and almost hopeless cases of this disease, as related by Dr. Pratt, of Baltimore, and published in the *American Journal of the Medical Sciences* for January, 1852; and further, from having witnessed a few days since its internal exhibition in a case under the care of Mr. Butcher, one of my colleagues in Mercer's Hospital, where the remedy appeared to act almost as a specific."

Mr. T. says that he considers the remedy well worthy of a further trial, though it failed in his hands in the present instance.

The following is the report of the case:—

"CASE.—*July 5, 1852.*—A strong healthy young man, having for many days drunk to excess, was brought to Mercer's Hospital suffering under well-marked symptoms of delirium tremens. Of his own accord he had taken some laudanum previous to admission, as he was well aware of the nature of his attack. He could not be induced to remain in bed, but kept constantly moving about, talking incoherently.

"I first saw him at visiting hour, 9 A.M. He was quiet in bed then; the tongue whitish and loaded; the breath had the peculiar offensive odour of those addicted to alcoholic excesses; pulse rapid, 140; some vomiting; profuse sweats. I gave him calomel and scammony, of each four grains. When bowels moved, to have one grain of morphine, to be repeated in six hours if necessary.

"6th. Night restless and wandering; no sleep; got morphine as directed; bowels well freed. At 4 o'clock A.M. became greatly excited, struggling furiously with his attendants, who were unable to control him; fancies there is a conspiracy to poison him. At 9 o'clock A.M. he was somewhat calmed. I now gave him ʒj of chloroform mixed in water; in half an hour he forced himself to vomit a little.

"1 o'clock P.M. More tranquil; had a short sleep; bowels open since morning visit; pulse 100; still irrational and talkative; ʒj chloroform repeated. 5 o'clock P.M. No sleep; same in other respects as last visit; gave again ʒj of chloroform; to have good beef tea and bread.

"7th. 9 o'clock A.M. Got a fair proportion of sleep since yesterday, but still irrational as ever; pulse down to 72; compressible. Resident pupil reports, that about 1 A.M. he found him much excited, and gave him 40 minims of chloroform; he has now no headache, suffused eye, or tendency to coma. I now ventured to give ʒj more of chloroform; it was shortly after rejected from his stomach; and, after a couple of hours, he became more furious and uncontrollable than ever. I visited him at 1 o'clock P.M., and not finding his condition improved, I at once determined to abandon the chloroform, and with the consent of my colleagues, to substitute the calomel and opium treatment, which I have so rarely found to disappoint me.

"I now gave him four grains of calomel and two of opium in a pill, with directions to get three of calomel and one of opium every third hour, watching its effects.

Henceforth he got sound and continued sleeps, and on the evening of July 9 he left the hospital, with his mind perfectly restored.

25. *On the Pathology and Treatment of Leucorrhœa based upon the Microscopical Anatomy of the Os and Cervix Uteri.*—[A very interesting and instructive memoir

on this subject was read before the Royal Medical and Chirurgical Society, by W. TYLER SMITH, M.D. His researches are calculated to lead to a better understanding and an improved treatment of a very intractable class of disorders.]

The author first directed attention to the minute anatomy of the os and cervix uteri: and here, at the outset, he was desirous of expressing his warmest thanks and obligations to Dr. Arthur Hassall, for his valuable assistance in the microscopical part of the investigation, and without which he could not successfully have prosecuted his researches. The mucous membrane of the os and cervix uteri, like the mucous membrane of other parts, consisted of epithelium, primary or basement-membrane, and fibrous tissue, bloodvessels, and nerves. But as there were some special characteristics pertaining to this tissue, he proposed, for the convenience of description, to examine, first, the mucous membrane of the os uteri and external portion of the cervix: and, secondly, the mucous lining of the cervical cavity or canal. The epithelial layer of the former of these situations was tessellated or squamous, and so arranged as to form a membrane of some thickness: by maceration, it could be easily detached, and it was then found closely to resemble the epithelial covering of the vagina, with which it was continuous. Beneath this epithelial layer was the basement-membrane, covering numerous villi or papillæ, which studded the whole surface. Each villus contained a looped bloodvessel, which, passing to the end of the villus, returned to its base, and inoculated with other bloodvessels of the contiguous villi. These villi had been mistaken for mucous follicles, usually described as covering the surface of the os uteri; but the microscope failed to discover any distinct follicular structure in this situation. When a thin section of the surface of the os uteri was examined by a low power, the points of the villi could be seen as dark spots through the epithelial layer. A careful examination exhibited these spots as slightly depressed in the centre, yet nevertheless slightly elevated in their margins, nipple-shaped, and containing red points, which were the terminations of the looped bloodvessels. These appearances were produced by the villi being obscured by their epithelial covering. The thick layer of scaly epithelium, and the villi with their looped vessels, were the principal anatomical features of the mucous membrane of the os and external part of the cervix uteri; and these structures played an important part in the pathological changes which occurred in the lower segment of the uterus in leucorrhœa. Between the margin of the lips of the os uteri and the commencement of the peniform rugæ, within the precincts of the cervical canal, a small tract of smooth surface was usually found, which to the naked eye seemed of more delicate structure than the neighbouring parts, and when examined by the microscope was found to be composed of cylinder epithelium, arranged after the manner of the epithelium covering the villi of the intestinal canal. The cylinder epithelium covered in this situation villi two or three times larger than the villi upon the surface of the os uteri—so large, indeed, as to be visible to the naked eye when viewed by transmitted light. Within the cavity of the cervix uteri, the mucous membrane contained four columns of rugæ, or folds, arranged in an oblique, curved, or transverse direction; and between these columns were four longitudinal grooves. The two sulci in the median line, anteriorly and posteriorly, were the most distinct; and of these, the sulcus of the posterior columns was the most strongly marked. In the normal state, the transverse rugæ, with the fossæ between them, were filled with viscid, semi-transparent mucus; and when this was brushed away, a reticulated appearance, caused by numerous secondary rugæ, was visible. The author gave a very minute description of these four rugous columns, and the furrows between them, which was illustrated by some very beautiful drawings of the cervical canal, displaying the rugous columns and fossæ of the natural size, and magnified nine and eighteen diameters. The latter power showed a large number of mucous fossæ and follicles, crowding the depressions between the rugæ, and the rugous elevations also. The author mentioned that a healthy virgin cervix, of normal size, contained at least ten thousand mucous follicles. This anatomical arrangement secured a vast extent of superficial surface, which was still further increased by the presence of villi similar to those found in the lower part of the cervix; they were found in con-

siderable numbers on the large rugæ and other parts of the mucous membrane in this situation. By this disposal of the mucous membrane of the canal of the cervix, a very large extent of glandular surface was obtained for the purposes of secretion. In effect, the cervix was an open gland; and, in the opinion of the author, it was in this part of the utero-vaginal tract that the principal seat of leucorrhœa would be found to exist. There was an analogy here which should not be lost sight of, bearing, as it did, on the pathology and treatment of leucorrhœa, which was, the great similarity which existed between the skin and the mucous membrane of the vagina and the external part of the os and cervix uteri. The resemblance, in these situations, was certainly much nearer to the cutaneous structure than to the mucous membrane of more internal parts. These analogies were strongly confirmed by what was observed of the pathological conditions to which these parts were liable, and by the effect of therapeutical applications. The author dwelt on the fact that the epithelium of the os uteri and external portion of the cervix was constantly squamous, and that the epithelium immediately within the os uteri was cylindrical but not ciliated, but that in the rugous portion of the cervical canal the cylindrical epithelium became ciliated. The mucus secreted by the glandular portion of the cervix was alkaline, viscid, and transparent; it adhered to the crypts and rugæ, so as to fill the canal of the cervix. It consisted chiefly of mucus corpuscles, oil-globules, and occasionally dentated epithelium, all entangled in a thick, tenacious plasma; it was remarkable for its tenacity; while the mucus found in the lowest part of the canal was thinner in appearance. There was an essential chemical difference between the vaginal mucus and the secretion of the interior of the canal of the cervix; the first was always acid, and the latter invariably alkaline. Mr. Whitehead, of Manchester, had noticed this fact, and the observations of the author confirmed his views. The acid of the vaginal secretion was more than sufficient to neutralize the alkaline secretion of the cervix, and when any secretion from the cervical canal entered the vagina, it became curdled from the coagulation of its albumen. It was worthy of note, that that part of the mucous membrane of the uterus and vagina which resembled the skin was the only part which, like the skin, furnished an acid secretion. The vaginal mucus was a simple lubricatory fluid. But the uterine cervical mucus had other uses besides that of lubrication; in the healthy condition, in the intervals of the catamenia, it blocked up the passage from the vagina to the fundus; it thus defended the cavity of the uterus from external agencies, and from its alkaline character afforded a suitable medium for the passage of spermatozoa into the uterus. Having stated his views of the structure of the utero-vaginal mucous membrane, the author expressed his opinion that the glandular portion of the cervix uteri was the chief source of the discharge in leucorrhœa. Leucorrhœa, in its most simple and uncomplicated form, was the result of an increased activity of the glandular portion of the cervix. A follicular organ, which should only take an active condition at certain intervals, became constantly engaged in secretion. Instead of the discharge of the plug of mucus at the catamenial period, an incessant discharge was set up. At first, the discharge was but an unusual quantity of the elements of the healthy mucus of the cervix. The quantity increases, and becomes a serious drain to the constitution, and the glandular cervix in some cases becomes so excitable, that any unusual stimulus, even mental emotions, provokes an augmentation. The author next referred to the conditions under which the epithelium of the os and external part of the cervix uteri and upper portion of the vagina might be partially or entirely removed. The mucous membrane then presented an intensely red colour, from the presence of the naked villi, and an appearance of roughness or excoriation presented itself. He thought that among the causes which produced this aspect of ulceration were eruptive disorders, similar to herpes or eczema, which strongly marked the analogy between this tract of mucous surface and the skin. He had observed cases in which an occasional herpetic eruption upon the os uteri always produced herpes preputialis in the husband. But the most frequent cause of denudation arose from the alkaline mucous discharge of the cervix irritating the acid surface of the os uteri, and causing the rapid shedding of the epithelium round the margin of the os. A microscopical examination was given of the various discharges met with

in these affections, in making which the author was assisted by Dr. Hanfield Jones and Dr. Hassall. In cervical leucorrhœa, the discharge consisted of quantities of mucus-corpuscles, and in severe cases pus-corpuscles and blood-disks, with fatty matter, involved in a transparent plasma. The epithelial debris is constantly present, but in limited quantity. In vaginal leucorrhœa, including the secretions of the external portion of the os and cervix uteri, the plasma is opaque, and contains myriads of epithelial particles in all stages of development, with pus and blood-globules when the villi are affected. When a circumscribed ulcer is visible upon the os uteri to the naked eye, after death, such as occurs in eruptive affections of the os and cervix, and is examined by the microscope, with a low power, it is found to consist of a base from which the villi are entirely removed, or in which only the scattered debris of villi remain; and surrounding this base there is a fringe of enlarged villi, partially or entirely denuded of epithelium. The character of the so-called ulceration of the os uteri was detailed, and the nature of the discharges described. The author then observed that if any division of leucorrhœa were made, two principal forms must be recognized:—

- I. The *mucous* variety, secreted by the follicular canal of the cervix.
- II. The *epithelial* variety, in which the discharge was vaginal.

With respect to the so-called ulcerations of the os and cervix, two kinds of morbid change would be observed:—

1. *Epithelial abrasion*, by far the most common, in which the epithelial alone was deficient.
2. *Villous abrasion, erosion, or ulceration*, in which the villi are affected by superficial ulceration.

It was to the villi, denuded of epithelium and partly eroded, that the marked forms of granular os uteri were owing. The ovules of Naboth, often referred to by writers as obstructed follicles, the author had found to be in reality an eruptive disease of the mucous membrane analogous to a cutaneous affection. In these affections of the cervix uteri, it frequently happened that the cervix uteri was partially everted, and the deep-red surface covered by vascular villi, thus exposed, had frequently been mistaken for breach of continuity in the mucous surface. The author then offered some remarks on the practical deductions which might be drawn from the present investigation. The glandular structure of the parts from whence the leucorrhœal discharge arose pointed to the influence of constitutional causes, and exemplified why this affection should be so common in women of strumous habit and leuco-phlegmatic temperament; it vindicated the importance of constitutional treatment, and directed attention to the more rational employment of topical remedies; and it was evident that the profuse application of caustics, as recommended by the French school of uterine pathology, was both unnecessary and unscientific. He admitted that leucorrhœa of the cervical canal was sometimes cured by the use of caustics to the os uteri, but in these cases they acted as counter-irritants to the glandular structure. The indications of treatment, based on a knowledge of the minute anatomy of the os and cervix uteri, and the study of its pathology in leucorrhœa, appeared to the author to require constitutional medicines and regimen, with local applications. Local measures, to be of any use in cervical leucorrhœa, should be applied, not to the vagina, nor the os uteri, but to the canal of the cervix. In vaginal or epithelial leucorrhœa, common injections were serviceable; but in cervical or mucous leucorrhœa no benefit could result unless the injection passed into the cervix. He mentioned the methods he adopted to secure this result, and concluded by expressing a hope that the prosecution of these researches might prove serviceable, by rendering a troublesome class of maladies more intelligible than they had hitherto been, and by tending to correct errors of practice, and to indicate the just value of constitutional and topical remedies.

[Dr. Tyler Smith's paper was illustrated by a number of beautiful drawings, which excited great attention among the Fellows, representing the novel points described in the paper, and which were made under the superintendence of Dr. Hassall.]—*Lancet*, July 3, 1852.

26. *Complications of Scarlatina.*—Dr. ALEX. WOOD read before the Edinburgh Med.-Chirurg. Soc., 26th April, 1852, a communication entitled, “Notes on some of the more unusual Complications of Scarlatina, and more especially on the Relations between Scarlatina and Erysipelas.” The paper began by referring to the variety of character exhibited by this fever even in the same localities and at the same seasons—and to the frequency with which dropsy followed the mildest forms, of which illustrative examples were given. The author narrated several cases of the *scarlatina sine exanthemate*; showed the connection subsisting between them and the severe attacks of angina, to which attendants on scarlet-fever cases, who have themselves had the disease, are exposed. He considered the diphtheritic affections of the throat occurring in the disease, and narrated cases where the throat, and from it the conjunctiva, meatus auditorius, nerves, and trachea, were consecutively affected. He showed the occurrence of a similar affection in erysipelas, as also the tendency to affections of the brain and kidney in both diseases. He likewise referred to the diffuse inflammation of the cellular tissue of the neck, as particularly illustrating this connection. Of this sequela several cases were given, and Dr. W. attempted also still farther to connect it with the disease of the pudendum described by Mr. Kinder Wood, demonstrating the connection between both of these affections and albuminous urine.

The PRESIDENT remarked that *sore-throat* was a very constant attendant on erysipelas of the face, and that in general it would be found that the inflammation of the fauces spread continuously from thence to one or other of the external outlets, as the angle of the eyelid or mouth, the opening of the nostril or meatus auditorius, and afterwards to the face and head; but the sore-throat, though often troublesome and even dangerous, he did not regard as corresponding in character with that of scarlatina, and certainly he had never observed, in the erysipelatous sore-throat, the pellicular exudation called *diphtherite*, which was common, and often fatal, as an accompaniment of scarlatina.

Dr. SELLER said that the suppuration of the cellular tissue described by Dr. Wood as occurring after scarlatina, was quite a different affection from erysipelas; indeed, the skin proper was not involved in these cases in the inflammatory action. He agreed with Dr. W. in thinking that suppuration in the neck after scarlatina was a very formidable, and indeed generally fatal affection; in fact, it seldom attacked any but unhealthy children, or those living under very bad sanitary conditions. He had seen a great number of cases of this complication in an epidemic of scarlatina some years ago, chiefly in the Cowgate of Edinburgh; and there was in these cases no true erysipelas. He had always regarded the prevalence of these complications as determined in a great degree by the peculiarities of epidemic constitution.

Dr. ANDREW WOOD remarked, that he agreed with Dr. Sellar as to the fact of the more frequent occurrence of severe cases of scarlatina characterized by diffuse cellular inflammation of the neck and suppuration of the cervical glands in particular epidemics; and he believed that unhealthy children were most apt so to suffer. Even in mild epidemics, cases of this kind were frequent amongst the children of the poor, whose powers of resistance to morbid action were small, in consequence of the influence of various depressing causes, as insufficient food and clothing, want of cleanliness, deficient ventilation, etc.; but children of those in comfortable circumstances were by no means exempt, especially in families of naturally delicate constitution, or in individuals of families whose constitutions had been weakened by previous ill-health. Dr. W. considered it of great importance to apply judicious and efficient treatment at as early a stage as possible, not only in the severe forms of scarlatina, but also in those mild attacks which might appear to require little or no remedial aid; because, as every one who had had much experience in this disease must have observed, it was impossible to predicate that dangerous symptoms might not develop themselves, either during the course of the primary fever, or subsequently, at the period when that formidable sequela—dropsy—was most wont to supervene. In this way, the occurrence of dangerous complications might often be altogether prevented, or, at least, be greatly modified in severity. An extensive experience in the treatment of scarlatina, had led him to the conclusion,

that the most efficient, as well as the most safe method of cure was by acting powerfully on the skin, and thereby assisting nature to eliminate the poison of scarlatina from the system. It is well known that the ordinary medicinal diaphoretics frequently failed in scarlatina. The warm-bath, when properly used, was often a most valuable remedy; but sometimes, especially amongst the poor, this was, for obvious reasons, not easily made available, and even when available it occasionally disagreed, causing sickness, giddiness, rigors, and other unpleasant symptoms. Dr. W. had in consequence been led to have recourse to a diaphoretic plan of treatment, which was easily available under all circumstances, whether in the hovels of the poor or the palaces of the rich, and from the use of which, in a large number of cases, he had obtained the most satisfactory results both in relieving present symptoms, and in averting future mischief. The remedy to which he referred, was what might be deemed *the modified vapour-bath*, for the suggestion of which the profession was indebted to the late distinguished Dr. John Thomson, of this city, and which deserved to be more extensively known than it was as an important adjuvant in the treatment not only of scarlatina but of many other febrile diseases. The following was the mode of using this remedy: You take several long worsted stockings, or long narrow flannel bags; after having wrung them out of water as hot as can be borne, you then fill them with common beer bottles containing very hot water. These are to be laid alongside the patient, but not in contact with the skin—one on each side, and one between the legs, will generally be sufficient; but more may be used if deemed necessary. The patient is to lie between the blankets (the head, of course, being outside) during the application of the bottles, and for several hours after. In the course of from ten minutes to half an hour, the patient is thrown into a most profuse perspiration—the stockings may now be removed. In mild cases, the effect is easily kept up by means of draughts of cold water, and, if necessary, by the use of two-drachm doses of *sp. mindereri* every two hours. In severe cases, where the pulse is very rapid, the beats running into each other—where the eruption is either absent or only partial, or of a dusky purplish hue—where the surface is cold—where there is sickness or tendency to diarrhoea—where the throat is aphthous or ulcerated, and the cervical glands swollen, then it is expedient to follow up the vapour-bath by four or five grain doses of carbonate of ammonia, repeated every three or four hours. Should this be vomited, then brandy may be given in doses proportioned to the age of the patient. In general, after several doses of the brandy, the stomach becomes tolerant of the ammonia, which may then be resumed, and continued till the course of the symptoms indicates its discontinuance. The carbonate of ammonia, the use of which in scarlet fever was long ago warmly advocated by Mr. Peart, he had found a valuable remedy; it seemed to act beneficially in several ways: 1st, by supporting the powers of life; 2d, by assisting the development of the eruption; and, 3d, by acting on the skin and kidneys. In the treatment of the sore-throat, he trusted chiefly to poultices applied externally, and frequent sponging of the pharynx with a gargle of dilute nitric acid, of the strength of \mathfrak{ss} ij to \mathfrak{ss} ijj of simple syrup. Where the vapour-bath was used early in the disease, and its use continued daily, or even twice or thrice a day, according to circumstances, he had found that the chance of severe sore-throat was greatly obviated; and in regard to the supervening dropsy, he believed that by the use of the vapour-bath, with the other necessary precautions as to exposure, diet, etc., its occurrence would be rendered much more rare; at least, such has been the case in his own practice. In the treatment of the dropsical cases, it was also very useful, and even might be trusted to entirely in some instances. Dr. W. condemned the use of purgatives in scarlatina during the first ten days, as not only not required, but positively dangerous, as tending to interfere with the development of the eruption. In the later stages, as well as in the dropsy, they were often of great service.

Dr. SELLER remarked that Dr. Wood's stimulant plan of treatment, however applicable to the treatment of scarlatina in the present day, could not have been followed out by any judicious practitioner in the epidemics which he had witnessed about twenty-five years ago, and in which, according to the testimony of all authors, an antiphlogistic treatment was most successful in obviat-

ing the dropsy and other complications. He was satisfied, from personal observations, that the disease had undergone a change of type, which was apt to be too little attended to by those who observed it at the present day.

Dr. CHRISTISON begged to corroborate Dr. SELLER'S statement as to the change of type which had taken place in scarlet fever in this city. Between 1817 and 1827, in this, as in all other febrile diseases, and also in the acute local inflammations, the sthenic or inflammatory character was much more marked than it has been since; and the treatment by depletion and other reducing means was then practised with propriety and success. No man would dream of using bloodletting and purging in fever and scarlatina now, as they were used with success, at all events with perfect safety, in the earlier period. Differences in "epidemic constitution" were far too little regarded by many writers in the present day.

Dr. MACLAGAN and Dr. GAIRDNER supported Dr. CHRISTISON'S statement; and in regard to scarlatina, Dr. G. alluded to Dr. ABERCROMBIE'S introduction into this city of the antiphlogistic practice in the dropsy of scarlatina, and bore testimony to its remarkable success.

Dr. ANDREW WOOD said he had no doubt of the success of antiphlogistic practice in the scarlatina dropsy. In conjunction with the vapour-bath he did not hesitate to employ it in suitable cases, but considered that the important object of treatment was to prevent dropsy and formidable local complications, and that formerly attention had been too exclusively directed to these complications, and too little to the original blood disease, and to the existence of a poison in the system which was eliminated by the skin.

Dr. CHRISTISON repudiated the idea that the general disorder had ever, at any period, been overlooked in the treatment of scarlatina. The depleting treatment by bloodletting and purging, practised between 1817 and 1827, was not directed to local affections, but to the state of general reaction, the constitutional disease.

Dr. J. W. BEGGIE, reverting to the subject of the relation between scarlatina and erysipelas, remarked that another point of resemblance between the two diseases was the occurrence of coagulable urine in a considerable proportion of cases of both affections. He proposed to read a paper connected with this subject at next meeting of the Society.

Dr. W. T. GAIRDNER said that he believed many of the complications described by Dr. Alex. Wood, as common to scarlatina and erysipelas, would be found prevailing at particular seasons in other epidemic diseases. A marked instance was the epidemic fever of 1847-8, in which a throat affection very similar to what occurred in erysipelas was exceedingly common, and led to the more frequent performance of tracheotomy in a few months than had been necessary for several years before or since that period. Many of these cases were abdominal or enteric typhus, but the throat affection occurred in some instances in the ordinary typhus, and also, he believed, in the relapsing fever to a less extent. He had likewise seen, at the same period, a few instances of formidable suppurations of the parotid and cervical glands during the convalescence from typhus.

Dr. ALEX. WOOD said that it had not been his intention to dictate any exclusive treatment. He had merely wished to show that possibly the erysipelatous character of some cases of scarlatina might account for the differences of treatment required.—*Monthly Journ. Med. Sci.* July, 1852.

27. *Temporary Albuminuria*.—Dr. JAS. W. BEGGIE read before the Edinburgh Med.-Chirurg. Soc., May 5, 1852, a paper on "Temporary Albuminuria, more particularly as occurring in the Course of certain Febrile or other Acute Diseases." The author defined *temporary albuminuria* as the manifestation and continuance of albumen in the urine during a limited period, and without any serious organic change in the kidney. He recognized three varieties of temporary albuminuria, each of which formed appropriate illustrations in some well-known conditions of acute disease. Thus *desquamative albuminuria*, the first variety, was found in simple scarlatina, in erysipelas, and in Asiatic cholera; *inflammatory albuminuria*, the second type, was illustrated by the con-

dition of the urine in the dropsy following scarlatina; while, according to Dr. B., a third kind, a *critical albuminuria*, occurred in pneumonia and in certain cases of typhus fever. In desquamative albuminuria, the occurrence of albumen was associated with the separation of epithelium from the mucous surface of the kidney and bladder; and in scarlatina this was likewise connected with a desquamative change in the skin, as it was in cholera, with a similar condition of the mucous coat of the intestines. Desquamative albuminuria was likewise found in some other febrile diseases, but these were the most frequent and familiar examples. The characters of the urine under the microscope (which Dr. Begbie described in detail) presented certain minor differences in different cases; but there were characters common to all cases of this affection, distinguishing it as a special form of albuminuria. Inflammatory albuminuria was characterized by the presence of renal tube-casts, often granular cells, and very generally blood-corpuscles, in greater or less abundance, showing a certain amount of renal congestion and disorganization. This was, according to Dr. B.'s experience, the invariable type of albuminuria in scarlatina attended with dropsy. It might, or might not be temporary; and probably in some cases led to permanent renal disease, especially if neglected or unskillfully treated. In most cases, however, it might be regarded as a curable disorder. Critical albuminuria occurred about the period of the resolution of certain fevers and acute inflammatory affections, particularly of the abdominal typhus, and acute pneumonia. It was distinguished, not only by the period of its occurrence, and the symptomatic changes with which it was connected, but by the collateral changes in the urine itself; viz., the occurrence of precipitated lithates, etc., as in the ordinary urine at the crisis of acute affections; and likewise by the absence of the large quantities of epithelium, and the other microscopic elements formerly alluded to. These were replaced in the critical albuminuria, by a large number of very minute molecules and granules, which Dr. B. had been led to regard as the debris of the exudation from the lung or other organs, chemically unchanged. The critical albuminuria, therefore, was to be regarded as the evidence of the change taking place in the primarily diseased organ during its restoration to a healthy state.

Dr. CHRISTISON said that his own experience, although consisting of scattered observations, went far to corroborate some of the results arrived at by Dr. Begbie. He had not found albuminuria quite so common in scarlatina, however, as Dr. B. had indicated, and though this might be owing in part to imperfect observation, he was inclined to believe that there might be a difference in different epidemics of the disease. In Heriot's Hospital, where his cases had been observed on the greatest scale, in conjunction with Dr. Andrew Wood, he thought it possible, also, that the inferior frequency of albuminuria might be in some degree owing to the strong derivation to the skin in the treatment practised by Dr. Wood. Dr. Christison advised Dr. Begbie to watch attentively the after history of those individuals having temporary albuminuria. He (Dr. C.) was inclined to think, from what he had observed, that the recurrence of the affection might in many cases be looked for at intervals; and possibly it might be found that the persons so affected fall a prey in the end, in a considerable proportion of cases, to organic disease of the kidney. He had seen instances of this, both in the alleged temporary albuminuria from eating certain kinds of food, and also in that which followed the application of blisters.

Dr. ANDREW WOOD laid before the Society at considerable length the particulars of his experience in Heriot's Hospital, with reference to albuminuria in scarlatina. His details were generally corroborative of the statements of Dr. Christison, showing that albuminuria occurred in scarlatina in about one-half the cases in which a daily examination of the urine was made. His experience differed from that of Dr. Begbie in a few other points. He had in one case met with a relapse of albumen in the urine. He had likewise seen the tube-casts, etc. (the inflammatory albuminuria of Dr. Begbie), in the simple scarlatina without dropsy; and in one case these occurred during steady improvement of the general symptoms. With regard to the influence of treatment alluded to by Dr. Christison, Dr. Wood had observed that among cases in which the

vapour-bath had not been efficiently used (at the commencement of the epidemic) there had been seven cases of albuminuria; whereas in the succeeding eighteen cases, treated by the vapour-bath and otherwise, according to his method (see last meeting of the Society), there were only five cases of albuminuria.

Dr. W. T. GAIRDNER remarked that, from the period of his earliest observations in regard to the diseases of the kidney, he had been induced to regard albuminuria as a species of catarrhal affection of the renal tubuli, or of the external urinary passages. He had found this view confirmed by the evidence both of morbid anatomy and of clinical inquiry. He regarded Bright's disease of the kidney as the analogue of bronchitis or broncho-pneumonia in the lung, as he had stated at a meeting of the Medico-Chirurgical Society several years ago. Although concurring in many of the observations of Dr. J. W. Begbie, he (Dr. G.) could not regard the three species of albuminuria described by him as being quite established. He (Dr. G.) was rather inclined to regard them as varieties, depending merely on different degrees of intensity of the affections, and perhaps on a few other circumstances not perfectly understood. He also thought with Dr. Christison that the occurrence of albuminuria, whether temporary or permanent, was always to be regarded with suspicion. He could not bring himself to look upon this circumstance as a favourable pathological indication, and thought that if it did not indicate the actual occurrence of renal disorganization, it ought generally to be accepted as evidence of some tendency to that condition.—*Monthly Journ. Med. Sci.* July, 1852.

28. *Hay Fever*.—WM. P. KIRKMAN, Esq., of Melton, has suffered annually for the last seven years from an attack of hay fever, and gives the following description of the affection:—

“Every year, at about the latter end of the month of May, a slight irritability and sensation of soreness at the inner canthi of both eyes is experienced. This continues on and off, unaccompanied by any other marked symptoms, perhaps for three or four days (no symptoms of febrile irritation whatever); to these are shortly added slight lachrymation, which subsequently becomes more profuse, and continues daily, with irritation at the inner canthi, to increase; the nostrils, one or both, become obstructed, and this is soon followed by itching, sensation of pricking and soreness in the same region; the Schneiderian membrane now begins to secrete a quantity of thin watery fluid, calling for the almost incessant use of the pocket handkerchief; in fact, by the commencement of the month of June, there are all the appearances of what is vulgarly called ‘a running cold;’ these daily, but gradually, increase, and as gradually become accompanied by other concomitants, until about the end of June or the commencement of July, when the affection is at its height, and presents the following distressing symptoms: There is intense itching and irritability of the conjunctivæ, especially towards the inner canthi, as well as of the Schneiderian membrane; profuse lachrymation, and, when the attacks are severe, considerable intolerance of light; violent and continued sneezing, sometimes twenty or thirty times without ceasing; the defluxion from the nostrils is immense; there is coryza and grævedo with dyspnœa, which is frequently accompanied by wheezing during inspiration; the breathing being carried on by the mouth alone, as both nostrils are blocked up by the amount of secretion given out by their lining membrane. If these continue long, the eyes become bloodshot; there is headache, more or less severe; the pulse becomes small and weak; the tongue white and coated; shooting and darting pains about the back part of the head; lassitude and great debility. One might be inclined to doubt whether these evidences of the disease were not somewhat exaggerated, but it is not so. I have detailed to you as correctly as I can, everything relative to the symptoms and order of their occurrence as they attack myself individually, without any reference whatever to any medical author. I am generally free from the affection about the latter end of July, and I think I may say by the end of the first week in August, no traces of its existence remain manifest. It is equally severe in London as in the country. I am always worse during the day, and if in the forenoon the sun is shining bright, I hardly dare venture out

of doors, the intolerance of light being almost unbearable. The relief which is experienced for a few hours after a heavy shower of rain, can hardly be imagined, and the symptoms are always less distressing in wet weather. Again, it nearly always leaves me for a short time, sometimes a day or two, after a thunder-storm; and to this, partly, is my presence before you now to be attributed, for you will remember that yesterday we had a considerable amount of thunder and lightning: this circumstance, moreover, would tend to favour the idea entertained by some, both with respect to this, as well as to influenza, that the cause is to be attributed to some change in the electrical condition of the atmosphere—whether to an accumulation or deficiency of the electric fluid, I am not enabled to state. Ipecacuanha, it may be remarked, has no further effect upon me than the application of any other pulverulent matter would be supposed to have. On several occasions a pinch has been taken, the same as one would take a pinch of snuff, without producing any effect. I need hardly state that this was done merely by way of experiment. A sudden draught will bring on an attack immediately, which will continue for an hour or two, or even longer.

“One word may, perhaps, be desirable, relative to that from which it has derived its name—I mean hay, which brings on an attack, especially if it be new, almost instantaneously; and what is very remarkable and curious is, that I can always tell when any hay is approaching me, even if I do not see it. On one occasion, when walking in London with my friend Dr. Robert Growse, of Bildestone, I suddenly stopped, remarking that I would take any even wager that there was some hay close by. Before the doctor could hardly reply, a cart full of hay passed the end of the street down which we were proceeding. I could, were it necessary, relate to you many other similar occurrences; the one, however, which I have mentioned, is sufficient to verify my statement, and time will not allow of more. What then, gentlemen, is the cause of this periodical, but unwelcome visitor? I should feel inclined to differ somewhat from the opinion of Dr. Gordon, who supposes that it is produced by pollen from *one particular plant*, viz., the anthoxanthum odoratum, or sweet-scented vernal grass; and for this reason, because I am always attacked at least three weeks before the anthoxanthum is in blossom. If I may be allowed to offer my opinion, I consider it to be attributable to an idiosyncrasy of constitution, whereby the whole of the gastro-pulmonary mucous membrane is rendered susceptible of irritation, that irritation being produced by the pollen from a certain class of plants which blossom at that time of the year when the affection is prevalent. I refer to the whole family of the graminaceæ, rather than to any individual plant.

“And now, gentlemen, one word with respect to the treatment. It would, indeed, be preposterous in me, were I to make remarks on all the so-called remedies which have been recommended by various writers; suffice it to say, that I have tried very many of them, and all without effect; never have I found anything which afforded me the slightest permanent relief. Hot water fomentations, drinking hot water, cold-water draughts, effervescing mixtures, pressure on the bridge of the nose, have all in their turns carried off a paroxysmal attack of sneezing; but the good fortune of finding anything capable of allaying the almost intolerable itching of the eyes and nose, has never fallen to my lot. Dr. Owen Rees, Assistant-Physician to Guy's Hospital, recommended large doses of dilute sulphuric acid. I commenced with twenty minims three times a day, which, according to the direction of the Doctor, I gradually increased, until I arrived at a dose of one drachm three times a day. This had no other effect more than occasionally favouring me with a violent pain in the bowels, which compelled me to desist. Dr. Golding Bird and Dr. Gull, in consultation, recommended the disulphate of quinine with iron: this I continued to take for some considerable time, commencing at the ordinary dose, and increasing it gradually, which, however, proved equally ineffectual. Strychnia, recommended by Dr. Addison, in doses varying from the one-twentieth to one-twelfth of a grain, ter in die, was tried, but proved useless. Arsenic, sulphate of zinc, tincture of the lobelia inflata, snuff, landanum, salines of all kinds, iodine, and a host of others which now escape my memory, have all had pretty fair trials, which, as

remedial agents in hay-fever, are all on a par. Such, then, gentlemen, is the hay-fever in my case. If you can kindly suggest anything, I shall be only too glad to give it a fair trial."—*Provincial Med. and Surg. Journ.* July 21, 1852.

29. *On some of the Principal Effects resulting from the Detachment of Fibrinous Deposits from the Interior of the Heart, and their Mixture with the Circulating Blood.* By WM. SENHOUSE KIRKES, M. D.—("Proceedings of Royal Medical and Chirurgical Society.")—As an introduction to the subject, the author observed, that it was a clearly established fact, that the fibrinous principle of the blood might, under certain circumstances, separate from the circulating fluid, and be deposited within the vascular system, especially on the valves of the heart. The forms of fibrinous concretions to which the following observations especially applied, were, first, the masses usually described as Laennec's globular excrecences; and, secondly, the granular and warty growths adhering to the valves, and presenting innumerable varieties, from mere granules to large irregular fungous or cauliflower excrecences, projecting into the cavities of the heart. These growths, when once formed, whatever might be their origin, were full of peril, and would often remain so, long after the circumstances which gave rise to them had passed away. When of large size, or loosely adherent, they might at any time be detached from the valves, and conveyed with the circulating blood, until arrested within some arterial canal, which might thus become completely plugged up, and the supply of blood to an important part be suddenly cut off, from which, serious if not fatal results would ensue; or, smaller masses might be detached, and pass on into arteries of much less size, or even into the capillaries, whence congestion, followed by stagnation and coagulation of the blood, and all the consequent changes such coagulated blood is liable to undergo in the living body, would necessarily follow. Many singular morbid appearances observed in internal organs, and not well accounted for, were probably brought about in this manner. Again, the masses of fibrine might soften, break up, and discharge the finely granular material, resulting from their disintegration into the circulating blood, and, contaminating this fluid, might excite symptoms very similar to those observed in phlebitis, typhus, and other analogous blood diseases. Thus, the fibrinous material detached from the valves, or any other part of the interior of the heart, might be the cause of serious secondary mischief. The parts of the vascular system in which these transmitted masses of fibrine might be found, would in great measure depend upon whether they were detached from the right or left cavities of the heart. Thus, if from the left, they would pass into the aorta and its subdivisions, and would be arrested in any of the systemic arteries or their ramifications, and especially in those organs which receive large quantities of blood direct from the left side of the heart, as the brain, spleen, and kidneys; on the contrary, if escaping from the right cavities, the lungs would necessarily become the primary, if not the exclusive, seat of their ultimate deposition. A division of the subject being thus naturally formed, the author proposed to consider the subject, first as to the remote effects resulting from the separation of fibrinous deposits from the valves or cavities of the left side; and, secondly, as to the corresponding effects produced by the detachment of like deposits from the valves or cavities of the right side of the heart. The author then proceeded to elucidate the first branch of the subject, in which masses of some magnitude were detached from the left side, and arrested in an arterial channel of notable size. This pathological fact was illustrated by three cases, in many respects identical; for, in each, death appeared to ensue from softening of the brain, consequent on obstruction in one of the principal cerebral arteries, by a mass of fibrinous material apparently detached from growths on the left valves. The first case was that of a female, aged 34, of pale and delicate aspect. She had suffered from rheumatic pains, and there was a loud systolic murmur heard over the entire cardiac region. While under treatment for these symptoms, she suddenly fell back as if fainting. She was found speechless, with partial hemiplegia of the left side, but there was no loss of consciousness. The hemiplegia increased, involved the face and limbs, and gradually became complete in regard to motion; but sensation remained unimpaired. These

symptoms lasted five days, when she died quietly. The *post-mortem* examination developed much congestion of the pia mater, amounting, in some places, to ecchymosis. The right corpus striatum was softened to an extreme degree, being reduced to a dirty, grayish-white pulp. In the posterior lobe of the right cerebral hemisphere was a similar spot of pale softening. The right middle cerebral artery, just at its commencement, was plugged up by a small nodule of firm, whitish, fibrinous-looking substance, not adherent to the wall, but rendering the canal almost impervious. The vessels of the brain were generally healthy, except a yellow spot or two in the coats of those at the base of the brain. The heart was enlarged; several broad white patches externally. The right valves were healthy, so also were the aorta; but the mitral valve was much diseased, the auricular surface being beset with large warty excrescences of adherent blood-stained fibrine. The right common iliac artery, about an inch above the origin of its internal branch, was blocked up by a firm, pale, laminated coagulum, which extended into the internal iliac. The pleuræ were adherent in places; liver and intestinal canal healthy; spleen large, pale, and soft, containing a yellowish-white cheesy substance. The kidneys were pale, rough, and granular: within the cortex of the right were several large masses of yellow deposit, surrounded by patches of redness. Death had resulted, in this case, from the softening of a large portion of the right side of the brain, which the author considered to have arisen from an imperfect supply of blood, consequent on the middle cerebral artery of the same side being obstructed by a plug of fibrine. The author then discussed the sufficiency of such an obstruction to produce the effects ascribed to it, and he brought forward many examples showing that atrophy and disorganization usually resulted from any circumstance which materially impeded, or entirely cut off, the supply of blood to a part. The author then directed attention to the probable source of the fibrinous plug found in the middle cerebral artery. The suddenness of the cerebral symptoms rendered it probable, that the blocking up of the artery was equally sudden, and not the result of gradual coagulation of the blood within the vessel. The absence of all local mischief in the coats of the artery at the point of obstruction, as well as elsewhere, pointed to some other than local origin for the clot; and the author, at the time of the examination, formed the opinion that a part of the fibrinous deposit on the mitral valve had become detached, and carried by the stream of blood, until arrested at the angle whence the middle cerebral proceeded. This explanation suited equally for the plug found in the common iliac; for it was quite conceivable that portions of the loosely adherent fibrine might be easily detached by the stream of blood washing over the mitral valve, and, when once admitted into the circulating current, they would only be arrested by arriving at a vessel too small to allow their transit along its canal. Two other cases were described by the author, possessing many interesting points of resemblance: one, a female, aged 24; the other, a male, of the same age. Both were admitted into the hospital with hemiplegia of the left side; each had heart disease, indicated by a loud systolic murmur. The *post-mortem* examinations revealed the following morbid appearances common to both: Softening of a limited portion of the brain, producing death by hemiplegia; obliteration of the cerebral artery supplying the softened part; coagula in one of the iliac arteries; fibrinous deposits in the kidneys and spleen; and the presence of fibrinous warty excrescences on the valves of the left side of the heart. So many and such rare features of resemblance could not fail to demonstrate a very close connection between the several morbid appearances so exactly reproduced in each case. The author believed that these three cases satisfactorily established the two following conclusions: 1st. That softening of a portion of the brain, with attendant loss of function, might result from obstruction of a main cerebral artery by the lodgment of a plug of fibrine within its canal. 2d. That the foreign substance thus obstructing the vessel was probably not formed there, but was derived directly from warty growths situated on the left valves of the heart. The author thought it not improbable, although in the absence of direct proof it was but supposition, till further investigation confirmed these facts, that many cases of partial and temporary paralysis suddenly ensuing in one or more limbs of young persons, especially if accompanied with signs

of cardiac disease, might be due to interruption of a proper supply of nutriment to the brain by the temporary plugging up of a principal cerebral artery by fibrine, detached from a diseased valve on the left side of the heart. Other arterial branches besides those of the base of the brain might arrest these fibrinous deposits derived from the valves of the heart. In cases 1 and 2, coagula were found in the iliac and femoral arteries; and in case 3, in the renal. The author thought that many specimens found in museums, and supposed to illustrate the spontaneous coagulation of blood, or the deposition of fibrine within a limited portion of an arterial trunk, were probably to be referred to the same cardiac origin; and he illustrated the point by reference to a preparation in the museum of St. Bartholomew's Hospital. The second subject of inquiry consisted of an examination into the effects produced by smaller portions of fibrine detached in a similar manner, but arrested in the minute arterial branches, or even in the capillaries. The author thought that the singular masses of yellow fibrinous substance found in the spleen and kidneys, and other organs, and hitherto described as "capillary phlebitis," "metastasis," or "fibrinous deposits," were derived from this cause. Out of twenty-one cases in which the author had observed these deposits in the spleen and kidneys, or other parts deriving blood directly from the left side of the heart, in nineteen there was disease of the valves, or of the interior of the left side of the heart. In fourteen of these there were fibrinous growths on the surface of the left valves; in the remaining five there was simple mention of valvular disease. The author thought that the mere fact of so large a number of cases of so-called "capillary phlebitis" being associated with the presence of fibrinous deposit on the valves of the heart, suggested a very close relation between the two morbid states. The author then entered upon the third branch of this part of the subject, concerning the series of effects which might result from the introduction of fibrinous particles into the circulating blood, manifesting phenomena indicative of the existence of a morbid poison in that fluid. A case was related of a youth, aged fourteen, admitted into the hospital with obscure typhoid symptoms, the surface of the body being covered with petechiæ. Delirium, with much febrile prostration, followed; he became subsequently comatose, and died. Upon examination of the body, the surface was found covered with petechiæ. The pia mater was infiltrated with what seemed recently effused blood. The surface of the brain thus presented a blotchy appearance, and, amid these spots, were yellow-coloured patches of various size; some were of a greenish-yellow hue, and had the appearance of being smeared over with pus. The brain was unduly congested, and some ecchymosis near the surface; the cerebral arteries and sinuses healthy; several petechial spots on the surface of the heart, as well as in the cavities; and, on the auricular surface of the mitral valve, some white fibrinous vegetations, very soft and friable; a like deposit on the aortic valves, with evidences of ulceration; several yellow masses of fibrinous deposit on the surface of the spleen; cortical part of the kidney covered with minute petechial spots, in the centre of which was a buff-coloured dot; several large yellowish blotches extended deep into the substance of the cortex. The intestinal mucous surface was covered with petechial spots, which were apparent also on the mucous membrane of the bladder, pharynx, œsophagus, stomach, larynx, and trachea. The author considered the mystery of this case cleared up by the *post-mortem* examination. The attack had been ushered in by a severe pain in the right groin, which was rheumatic; then ensued rheumatic inflammation of the mitral and aortic valves, with ulceration of the latter, and deposition of fibrine. From these deposits portions had probably separated during life, and were transmitted with the blood to all parts of the body; and, being arrested in the capillary networks and smaller arteries, produced the various petechial and buff-coloured spots above described.

The second part of the paper related to the effects which might result from the detachment of fibrinous deposits from the right valves of the heart. Reference was made by the author to a paper on the Formation of Coagula in the Pulmonary Artery, by Mr. Paget, published in the *Transactions* of the Society, as well as to a specimen in the museum of St. Bartholomew's Hospital, in which there was deposition of fibrine on each of the pulmonary valves, with old coagula filling many of the branches of the pulmonary artery. In this case several large

solid, fibrinous masses were found in the substance of the lungs, presenting appearances not unlike portions of old pulmonary apoplexy. Lastly, the author recapitulated the principal points which he was desirous of establishing, viz.: 1st. That fibrinous concretions in the valves of the heart admit of being readily detached during life. 2d. That if detached and transmitted in large masses, they may suddenly block up a large artery, and thus cut off the supply of blood to an important part; if in smaller masses, they might be arrested by vessels of smaller size, and give rise to various morbid appearances in internal organs; or the particles mingled with the blood might be but the debris of softened fibrine, yet with power to produce a poisoned state of the blood, and bring on typhoid or phlebitic symptoms. 3d. That the effects produced and the organs affected would be in great measure determined by the side of the heart from which the fibrinous material had been detached: if from the right side, the lungs would bear the brunt of the secondary mischief; but if, as was most commonly the case, the left valves were the source, the mischief would be more widely spread, and might fall on any part, but especially on those organs which were largely and directly supplied with blood from the left side of the heart, as the brain, spleen, or kidneys.—*Medical Times and Gazette*, June 12, 1852.

30. *On the Influence exerted by Chronic Diseases upon the Composition of the Blood.* By MM. BECQUEREL and RODIER.—The following are the conclusions of a paper recently read at the *Académie des Sciences*, detailing the results of MM. Becquerel and Rodier's latest hæmatological researches: 1. The majority of chronic diseases and various anti-hygienic circumstances induce an increase or diminution in the three principal elements of the blood—the globules, the fibrine, and the albumen, and this either separately or simultaneously. 2. The globules undergo diminution in the course of most chronic diseases of long duration, and especially in organic diseases of the heart, the chronic form of Bright's disease, chlorosis, marsh cachexia, hemorrhages, hemorrhoidal flux, excessive bloodletting, the last stages of tubercular disease, and the cancerous diathesis. The same result is observed in those whose food is not sufficient in quantity or reparative power, or who are exposed to insufficient aeration, humidity, darkness, &c. 3. The albumen of the serum of the blood is diminished in quantity in the third stage of heart-disease, great symptomatic anæmia, the cancerous diathesis, and insufficient alimentation. 4. The fibrine is maintained at its normal proportion, and sometimes increased, in acute scorbutus. It is diminished in chronic scorbutus, as also in the scorbutic condition symptomatic of certain chronic diseases, which is most often and most markedly observed in organic diseases of the heart. 5. In all the above-mentioned circumstances, the quantity of water contained in the blood becomes very considerably increased. 6. A diminution of the proportion of globules is especially accompanied by the following phenomena: a colourless state of the skin, palpitations, dyspnœa, a *bruit de soufflet* heard at the base of the heart during its first sound, an intermittent *bruit de soufflet* in the carotids, and a continuous *bruit* in the jugulars. 7. The diminution of the proportion of albumen, even though not very considerable, when it takes place in an acute manner, rapidly gives rise to the production of dropsy, but it requires to be much more considerable when not appearing in the acute form. Considered in a general manner, dropsy is the symptomatic characteristic of a diminished proportion of the albumen of the blood. 8. A diminished proportion of fibrine is manifested by the production of cutaneous or mucous hemorrhages. 9. In anæmia symptomatic of considerable hemorrhage or insufficient alimentation, the change in the blood is characterized by a diminution of its density, an increase of the water, diminution of globules, a maintenance of the normal proportion or sometimes a slight diminution of the albumen, and a normal proportion of fibrine. 10. In chlorosis, which is an entirely distinct affection from anæmia, there may be no changes in the blood whatever. When such are present, they consist in a diminution of the proportion of globules, an increase of that of the water, and the normal quantity or an increase of the fibrine. 11. In the acute form of Bright's disease the fibrine continues normal, and the albumen is diminished. In the chronic form there is a diminution of globules and albumen, and sometimes of fibrine. 12. Most of the dropsies regarded as essential depend upon a diminution of the

proportion of albumen; and usually originate in a material cause, consisting in a degeneration of the solid or fluid parts of the economy. 13. In diseases of the heart the blood becomes more and more changed, as they approach the fatal termination. The changes consist in the simultaneous diminution of globules, fibrine, and albumen, and an increase of water. 14. In acute scorbutus, the principles of the blood do not undergo any appreciable modification. In the chronic form the fibrine is notably diminished, while the globules are sometimes considerably increased. In both forms, the increase of the proportion of the soda of the blood explains all the circumstances; but it has not yet been demonstrated. 15. The above modifications should influence our therapeutical management of these different morbid conditions, as each element of the blood is susceptible of special modification. Thus, when the proportion of albumen is diminished, we prescribe cinchona, and a tonic strengthening diet. A diminution of fibrine and an increase of the soda of the blood are to be met by good diet, vegetable acids, and appropriate hygiene; and by hygienic measures and the exhibition of iron, we combat the diminution of globules.—*Brit. and For. Med.-Chirurg. Rev.* July, 1852, from *L'Union Médicale*, No. 66.

31. *On the Protection against Smallpox afforded by Vaccination, illustrated by the Returns of the Army, Navy, and the Royal Military Asylum.*—T. G. BALFOUR, M. D., read a paper on this subject before the Royal Medical and Chirurgical Society, June 8, 1852. One of the principal difficulties in the investigation of this subject, he thinks, arises from the impossibility of ascertaining what proportion of the general population was unprotected by vaccination. Accurate deductions could, however, be founded on the returns of the army, navy, and Royal Military Asylum. Although the returns of the first department did not show the actual number of soldiers who had been vaccinated or had the smallpox, yet a tolerably accurate approximation might be obtained. From returns forwarded to the Army Medical Board, it appeared that out of 90,092 recruits medically inspected and found fit for service, 20,132 bore marks of smallpox, 64,096 had marks of vaccination, and 5864 bore no distinct traces of either. By the rules of the service, the latter would be immediately vaccinated; added to the second class, a total of 69,960, or 78 per cent. of the whole, would be protected by vaccination; 22 per cent. representing the proportion of those protected by previous smallpox. The question next arising was, what number of admissions into hospital, and deaths by smallpox, had occurred in this number. Abstract No. I, in the Appendix, furnished this information, and it showed the proportion of cases of smallpox to have been 66, and the deaths 8, in every 100,000 men serving throughout the army. But the prevalence and mortality varied in different portions of the force. Thus, the deaths had been four times as numerous among the troops in the United Kingdom as in temperate colonies, and eight times as numerous as in tropical colonies; while a still greater disproportion was found to exist in the admissions into hospital. A comparative statement of the proportion of smallpox among the black troops and Europeans serving in tropical colonies during several epidemics was furnished, by which it appeared that the disease literally decimated the black troops, while not a single death occurred among the European soldiers serving in the same garrisons. The author observed, that if the hypothesis be correct, that the protective power of vaccination became gradually weaker, and at length died out, the mortality from smallpox should be greatest among the old soldiers. The following return illustrated this point:—

Ages.	Aggregate strength at each age.	Died by Smallpox.	Ratio of Deaths per 1000 of strength.
Under 20	43,833	15	0.342
20 — 25	90,041	28	0.311
25 — 30	49,285	3	0.061
30 — 35	37,151	8	0.216
35 — 40	25,017	1	0.040
40 and upwards	9,270	0	...
Not known	...	1	...
	<hr/> 254,957	<hr/> 56	<hr/> 220.0

Returns from the navy exhibited the same satisfactory evidence of the protective power of vaccination. The vaccination register of the Royal Military Asylum had been kept with great care, and reliable evidence could be obtained from it. During a period of 48 years, 31,705 represented the aggregate strength of the boys, and among these only 39 cases of smallpox occurred, of whom 4 died. It must be borne in mind that every child bore marks of cow-pox or smallpox, or had been subsequently vaccinated; so that, in a population completely protected, the average was but 123 cases, and the deaths but 12, in every 100,000, being a still lower ratio than in the army serving in the United Kingdom. Another return displayed the comparative amount of protection afforded by vaccination and previous smallpox. The ratio of cases per 1000 of the latter was 6.15, and the deaths 2.05; while of those previously vaccinated, the ratio of cases was 7.06, and the deaths 0. All the deaths were thus from secondary smallpox. The author thought the preceding facts afforded most conclusive evidence of the protective value of vaccination, while the extensive numbers, and the period of time over which the observations extended, justified a very firm reliance on such evidence. He thought this evidence had an important bearing on the proposition recently made to legalize inoculation. While so large a proportion of the community remained unprotected by vaccination, he thought such a course most unjustifiable. Absolute immunity from smallpox was not to be expected, but the foregoing returns showed the great exemption obtained by vaccination. Vaccination should be made compulsory. It had been said that this would interfere too much with the liberty of the subject; but so to a certain extent did all measures relating to the public health. The prejudices of the few must be made to give way before the interests and safety of the many. In Factory Acts, Parliament recognized the principle of protecting the young against an amount of labor calculated to be injurious, and this in spite, not of the prejudices, but of the so-called rights of parents; and it would be but an extension of this humane principle to make vaccination compulsory, and thus afford protection against a malady of so fatal a character as smallpox.—*Lancet*, June 19, 1852.

32. *Smallpox*.—Dr. JOHN WEBSTER, in an interesting paper on the Health of London during the six months terminating March 27th, 1852 (*London Journal of Medicine*, Aug. 1852), gives some useful information relative to the prevalence of smallpox in London, and furnishes several important statements calculated to disprove the opinions lately put forth by Dr. Gregory.

Dr. Webster states that "smallpox has proved immoderately severe during the whole of last winter, having caused perhaps more deaths in London during the past season, than in any six months of the preceding twelve years, excepting in 1844 and 1848, in the former of which years, 1804 persons died from variola, and 1617 during the latter. In consequence of the recent augmentation of mortality from this complaint, considerable alarm became created in the public mind respecting the protective efficiency of vaccination, especially as many cases were stated to have had cow-pox in early life, and hence were believed safe against secondary attacks of smallpox. I will only now remark, in reference to one question, which has occupied a prominent place in this discussion, that several data, recently collected, seem highly instructive. I now allude to the ages of those parties who have unfortunately fallen victims to smallpox during the last six months, seeing a very large proportion were under puberty. Practitioners of eminence have asserted that individuals, although properly vaccinated in infancy, may take variola when arrived at manhood; since they say, authoritatively, cow-pox will have then lost much of its prophylactic efficacy, or have been even altogether eliminated from the system. Supposing, for the sake of argument, that some foundation exists for such inferences, it must be admitted, according to irrefragable evidence, that smallpox, whether secondary or otherwise, seldom proves fatal to adults, in comparison with the large proportion of children who sink under it. Hence, however frequently variola may supervene in adults, the number of deaths is, speaking comparatively, at all events then much smaller than among infants and children; since it appears 619 fatal cases, out of the 728 recorded during the last half year,

were under fifteen years of age. Taking it, therefore, as correct that cow-pox may occasionally become less efficacious as a protection, in after life, against attacks of variola, the facts now mentioned respecting the very great mortality of smallpox in young, compared with old people, decidedly prove the previous argument to be altogether erroneous. On the other hand, the greater fatality of variola among young persons indicates, in a higher degree, the propriety of employing vaccination, which would, I believe, prevent more effectually the spread of smallpox, provided that operation were always carefully and properly performed.

33. *Hereditary Transmission of Phthisis.*—Since 1825, M. GUILLOT has been tracing out the history of certain cases of phthisis, in order to illustrate the laws which regulate the hereditary transmission of this disease. He follows the history of the family line, in order to ascertain whether this does not, by successive degradation, become exhausted and extinguished. He refers to the case of a man who died of phthisis, aged 66. Before the age of 48, all his four children died of the same disease; all had children, but the third generation did not survive the period of the first dentition, all being carried off either by pneumonia supervening on tubercle, or by tubercular meningitis. In another example, a grandfather died of phthisis. One of his daughters also died of it at 30. The other daughter is still living, but three of her children have died either of tubercular pneumonia or meningitis. The general conclusion is, that in proportion as phthisis descends in the genealogical scale, its manifestation takes place at an earlier period of life. A child will therefore run greater chance of falling a victim to the consequences of the numerous accidents of a tubercular affection, in proportion as the phthisical parents who have given birth to it have not attained advanced age. In a diagnostical point of view, then, the existence of tubercular disease in the offspring while yet young, offers a very strong presumption of phthisis. The practical importance of this is especially evident in pneumonia, so common is it to find tubercles of the lungs in the bronchial glands, masked by the signs of this affection.—*Brit. and For. Med.-Chirurg. Rev.* July, 1852, from *L'Union Médicale*, 1852, No. 5.

34. *On the Influence of Pregnancy and the Puerperal State on the Progress of Phthisis.* By MM. GRISOLLE and DUBREUILH.—M. Grisolle, in reporting to the Academy of Medicine upon a memoir presented by M. Debreuilh, observes, that the views he formerly expressed have only obtained additional confirmation. In none of the thirteen cases related by M. Dubreuilh, or in the thirty-five now collected by M. Grisolle, has the power formerly vaguely attributed to pregnancy of staying the progress of phthisis, been observed. In some cases, indeed, it seems to have played the part of determining cause, and in others to have aggravated the condition. According to M. Grisolle's observation, cases in which the first symptoms of phthisis are developed at an early period of pregnancy, and amidst a state of health otherwise satisfactory, are more common than those in which the pregnancy is consecutive to the early appearance of the organic disease. Both observers are, indeed, of opinion that phthisical women conceive with difficulty; and M. Delafond assured the reporter that cows, even at an early period of the disease, usually remained sterile, even though they continued fully alive to the attentions of the bull. He added, also, that in such as did conceive, abortion was common about the fifth or sixth month; while in such as went their full time, the progress of the disease was in nowise modified. In M. Grisolle's former papers, he stated that pregnancy, in his cases, so far from retarding, hastened the progress of phthisis; and although the rate was found to be somewhat slow in M. Dubreuilh's cases, this probably arose from their having occurred in private practice, while M. Grisolle's were all hospital patients. Both sets of cases, however, amply disprove the suspending power of pregnancy; and M. P. Dubois's experience has long since led him to a similar conclusion. Phthisis which has appeared at an early period of pregnancy pursues a constantly onward course; and if improvement is to take place at all, it never does so until after delivery. It is rare for phthisis thus complicated to present those intermissions or sudden suspensions of progress sometimes met

with in ordinary phthisis. The children brought forth by phthisical mothers, though usually small, are plump and well-looking to an extent that would not, *à priori*, be expected from persons suffering from so exhausting a disease.

M. Dubreuilh expresses a theoretical opinion in favour of the prevalent belief that the progress of phthisis is hastened by *delivery*, but his facts are against him; and so complete is the suspension of the disease sometimes, that delusive hopes of cure are entertained.

In regard to the influence of *phthisis on pregnancy*, both observers are agreed that such patients *ordinarily* go their full time; which must be regarded as a remarkable fact, when it is considered that more than one-half the pregnant women attacked by pneumonia, abort. Both also find that these women usually have very easy labours—a fact due to the smaller size of the child and the relaxed state of the tissues. Both, too, consider that the attempt to suckle exerts the most disastrous influence upon both mother and child.—*Brit. and For. Med.-Chirurg. Rev.* July, 1852, from *Bulletin de l'Acad.* tom. xvii. and *Rev. Méd.* 1851, tom. ii.

EPIDEMICS.

35. *The Furunculoid Epidemic.*—THOMAS HUNT, Esq., in an article in the *Lancet* (Aug. 14, 1852), observes: “It is one advantage resulting from the Registration Act, that, by recording the number of deaths occurring from any fatal epidemic within a given period, it furnishes evidence of the rise, progress, and decline of the visitation. It is now well known to the profession that a class of diseases has recently prevailed, to which the name of “the furunculoid epidemic” has been given, consisting of carbuncles, boils, whitlows, pustules, and superficial collections of purulent matter.

“This pestilence,” he further remarks, “although it has occupied but little of public attention, has been more extensively fatal than any one would have suspected; that it has existed for several years, increasing in intensity up to the present year, if not to the present month, and that, unlike other epidemics, which usually traverse a portion of the globe, not contemporaneously but consecutively, this disease has existed at one and the same time, certainly in the four quarters of the globe, and probably in every country on the face of the earth.

My own attention was first called to the disease about the commencement of the year 1849, when I had occasion to remark that chronic eruptions of the order Pustulae had become unusually common, especially among a class of patients not frequently affected in this way, namely, the well-fed; their eruptive diseases being generally confined to the orders vesiculæ, squamæ, and papulæ. I had also observed that, in a patient under treatment for lepra or psoriasis of long continuance, the scales would disappear, and a crop of pustules would spring up in their place. This is no very unusual thing at any time, but the frequency of the occurrence arrested my attention. The next thing I observed was, that the superficial whitlow became very common. In one patient not less than seven fingers, and in another five, became affected in succession with this disease. In the course of three months about twenty patients consulted me in my private practice, with a collection of purulent matter immediately under the dermis, near the matrix of the nail, or at a short distance from it, in one, two, or more fingers of both hands, and in some instances occupying the palm. Shortly after this, boils and carbuncles were brought much more frequently under my notice than usual; some of the latter were of alarming character, though none of them fatal. These painful affections appeared to be very capricious in selecting their locality, scarcely any part of the body being passed over, excepting only the legs and feet. One patient, a middle-aged lady, had a carbuncle on the back of her neck, the inflammation extending around the throat up to the apex of the occipital bone, and down to the dorsal vertebræ. Another female had an immense furuncle on the os coccygis; a third

on the right labium; and a fourth, a young lady aged seventeen, had the whole abdomen covered for several weeks, together with a succession of boils and cœthymatous pustules. A gentleman had a carbuncle on the scalp, of prodigious size, in the year 1851, and in the spring of 1852, very recently, another still larger, occupying a different portion of the scalp; another patient had one on the thigh; a third, in the axilla, which appears to be a very common locality; a fourth, on the mastoid process; a fifth, on the throat, near the larynx; and several on the buttock. A servant-girl having been under treatment for an eczematous eruption on the wrist, upon the disappearance of this disease, presented the forearm covered with furuncular abscesses. Several females presented themselves with pustules and boils on the forehead, ears, eyelids, sternum, mammæ, and indeed on almost every part of the body, the face not escaping. At present, however, I have not met with a single case of carbuncle or boil below the knee, although pustules have been observed on the legs, and boils are very frequently seen on the thighs.

Although the seat of this epidemic is the skin and subcutaneous tissues, it has by no means the character of a purely local disease. The health has, in most cases, suffered more or less before the breaking out of the disease and during its progress; and in several cases in which it has persisted for some weeks, successive crops of boils or pustules appearing in different parts of the body, a restoration of the general health of the patient has appeared to be the signal for the final disappearance of the local affection. The impaired health which has accompanied the disease has been various in character and duration; but its prevailing type has been general and local debility, and a feeble, sluggish action of the heart and arteries. Many patients have complained of a slight degree of giddiness, a few of headache, and several have mentioned an indescribable sense of oppression at the præcordia, a general feeling of languor, and inaptitude for bodily or mental exertion, and an unusual degree of fatigue, sometimes amounting to faintness, from a very moderate amount of muscular effort. The pulse has generally been feeble and slow, thus denoting the cerebral symptoms to be indicative rather of deficient energy in the circulation than of plethoric congestion of the brain. A degree of hoarseness, such as accompanies typhus fever and hemorrhagic atony, and other exhausting diseases, has occasionally accompanied the attack. The voice appears to take a higher pitch, and to have lost its fulness and mellowness. This has chiefly been noticed in men. All these symptoms tend but to one conclusion, viz., that the furunculoid, like all other epidemics, is attended by a deficiency of power in the system. The worst case of carbuncle I have yet met with occurred in a lady, whose strength had been reduced by long anxiety, reverses, and misfortunes, and want of sufficient nourishment. The poor and ill-fed have been the most frequent, as well as the most severe sufferers; and a medical gentleman who is largely engaged in practice among the higher classes has recently assured me that he was not aware of the existence of any epidemic, and that he certainly had not observed a more than average number of carbuncles and boils among his own patients. Like all other epidemics (which usually spend their strength upon the asthenic portion of society), this affection does occasionally attack persons well fed and apparently in the full tide of health and strength. And it is worthy of observation that medical men, who usually appear to be exempted, as if by a special providence, from many contagious influences, yet seem to have been frequently selected as the victims of this disease; and in one lamented instance a carbuncle proved fatal to a practitioner in Dalston Terrace. I have not, however, been able to trace any proof of contagion in this epidemic. On the contrary, I can call to mind very few instances in which it has occurred simultaneously, or even consecutively, in a plurality of persons in the same household. In large schools, I believe, about twenty per cent. only have been attacked.

With regard to the statistics of the disease, it is impossible to form any estimate of the number of persons attacked in proportion to the population; but among the patients treated at the Western Dispensary for Diseases of the Skin, I find that twenty-one per cent. have been more or less affected with the epidemic in some one or other of its various forms. Two per cent. were attacked with

carbuncles, eight per cent. with boils, nine per cent. with pustules, and two per cent. with subcutaneous abscesses. The onychian form of the disease seems to have disappeared, and to have given place to those pustular tumours of the eyelids called stytes.

The geographical extent of the epidemic is one of its most extraordinary features. I have traced it to every part of the metropolis: to Oxford, Cambridge, Bath, Bristol, Manchester, and other cities and towns of England; to North and South Wales, to the northern coast of Kent, to the southern coast of Hampshire, and to the Isle of Wight. Reports have reached us of its prevalence in Ireland and Scotland, in France and in Austria, in both the East and West Indies, in the city of Philadelphia, and at the Cape of Good Hope. Literary notices of the epidemic may be found scattered in nearly all the medical periodicals, both British and foreign; and what is most singular, it appears to have broken out in the four quarters of the globe at one and the same time, and to have been influenced in its rise, progress, and decline by one universal cause.

Mr. HUNT also read a paper On the Epidemic, before the Epidemiological Society (July 5, 1852), in which we find some additional facts. He first described the epidemic as he had seen it in his own practice, and then alluded to the historical notices of its existence to be found in the periodicals, and to the accounts which had reached him in various ways from all parts of the world; from which it appeared, that it had occurred simultaneously in the four quarters of the globe.

He then endeavoured to trace the progress of the disease by the exhibition of tables, showing the deaths from carbuncle in the metropolitan districts, extracted from the annual and weekly reports of the Registrar-General for the last twelve years, from which appeared the following very remarkable results:—

Deaths from Carbuncle in the Metropolitan Districts from 1840 to Midsummer, 1852.

1840, 1841, 1842, 1843	Average 3½ per annum.
1844, 1845, 1846, 1847	Ditto 8 “
1848, 1849, 1850, 1851	Ditto 18 “
Last quarter of 1851, 9 deaths . . .	Rate 36 “
First “ 1852, 16 “	Do. 64 “
Second “ 1852, 5 “	Do. 20 “

Single Years.

In 1846 were registered	3 deaths.
In 1847 “	15 “
In 1848 “	20 “
In 1849 “	15 “
In 1850 “	19 “
In 1851 “	19 “
In 1852 (Six months)	21 “

Single Months, 1852.

In January were registered	8 deaths.
In February “	4 “
In March “	4 “
In April “	3 “
In May “	none.
In June “	2 deaths.

These tables show that the deaths from carbuncle have been doubled every four years since 1840, and that the increase commenced rather suddenly, so early as the year 1847. The epidemic, appears, therefore, to have existed in London four years, and to have arrived at its full height, in January, 1852. Other diseases tending to pustulation, and superficial suppuration, were shown to have also prevailed in the most extraordinary degree. Thus the deaths from phlegmon were reported to have nearly trebled their usual numbers during the last few years; and the fatality from smallpox, a pustular disease, to have been likewise nearly trebled of late; in the years 1840, 1841, 1842, and 1843, having averaged 771 per annum; and in the last three months, amounting to 472, or at the rate of 1,888 per annum.

Mr. Hunt expressed his belief in the existence of some analogy between the two epidemics, which he could not attempt to explain. He concluded by suggesting a mode of fortifying the system from the invasion of the carbuncular cachexy.—*Medical Times and Gazette*, Aug. 14, 1852.

36. *Epidemic of Carbuncular Inflammation of the Lip*.—It is stated in the *Lancet* (Aug. 21, 1852), that "An epidemic of carbuncular inflammation of the upper lip has been reigning for some time past, and the disease has proved in some instances extremely severe, and even fatal. Cases of this affection have occurred in various hospitals, but it would appear that by far the larger portion have been admitted into St. Bartholomew's Hospital. It is worthy of remark that the number of cases of common carbuncle is not in the least diminished by the above-mentioned epidemic—indeed, they seem to have greatly increased. The size of the sores is here and there enormous (as large as a dessert-plate), and the fact obtrudes itself upon the observer, that there is now reigning one and the same epidemic, attacking either the nape of the neck or the upper lip.

"It is particularly to the latter affection that we wish to draw attention, for we are not aware that it has been described by surgical writers. Indeed, when it was first observed at St. Bartholomew's Hospital, the general impression was, that it depended on some local irritation, or was the result of some noxious influence connected with the patient's trade. But no such idea can now be entertained, for the numerous cases which present themselves all point to a generally diffused epidemic action. Of what nature the poison may be, is, however, somewhat difficult to discover; but one fact should nevertheless be noticed—viz., the recurrence of the epidemic at the hot season of the year, and also the circumstance that the cases have been far more numerous this very hot summer than they were last year, when the temperature was uniformly lower.

"It would be interesting to ascertain whether cases of this kind have been at all observed in private practice among the middle and higher classes of society, in order to determine whether the great heat, combined with the effects of unhealthy dwellings or trades, is the chief agent in the production of the pathological phenomena to which we are alluding.

We know of one case, in which the subject was a surgeon, whose symptoms were very severe. The patient was under the care of Mr. Wormald, and recovered completely. Free incisions and stimulants formed the principal features of the treatment.

The cases have been so numerous at this hospital, that we shall not attempt to particularize them—indeed, the symptoms were very much of the same nature in all instances, the difference lying principally in the more or less intensity. The principal phenomenon presented is an enormous swelling of the upper lip, arising gradually from a pustule, which springs up at some part of the upper lip. The heat, pain, and redness do not keep pace with the œdema, which latter is the most striking symptom. This is generally carried so far, that the whole face becomes frightfully swollen, as is seen in the worst cases of erysipelas. Such distension and infiltration must necessarily be followed by sloughing of the cellular tissue: and this change is made very evident by the aspect of the parts after the incisions, which are generally made through the œdematous textures. The fever which accompanies these severe local symptoms is generally of the typhoid type, and so much so that support is clearly indicated. We shall just sketch a few of the cases which have come under our cognizance:—

Henry F—, aged nineteen years, a robust young man of fair complexion, and a copper-founder by trade, was admitted into Darker ward, June 17, 1852. The patient has always been very moderate in his habits; and being suddenly seized with pain and swelling in the upper lip, he presented himself to Mr. Wormald as an out-patient, three days before his admission into the hospital. Mr. Wormald made a free incision into the already considerably swollen parts, which procedure was followed by a good deal of bleeding. The affection had begun by a small boil in the lower part of the groove of the upper lip. As the pain and swelling went on increasing, the boy was taken into the hospital.

The whole of the upper lip was at that period enormously swollen, as well as the right side of the face, the whole being brawny and hard; the eye was closed, and the patient could hardly speak. The thickness of the tissues about the lip and face is certainly increased fourfold, and the aspect of the countenance

is frightful. The tongue cannot be protruded, the pulse is small and frequent, the skin hot, the secretions scanty, and no sleep can be obtained.

Mr. Stanley made several incisions in various directions, and gave exit to some purulent matter and blood; Dover's powder was given at night, acetate of ammonia in the day, and several ounces of wine.

In spite, however, of repeated incisions, and plentiful support, the patient became daily worse, and died four days after admission. On a *post-mortem* examination, purulent deposits were found in the lungs, and extensive adhesions of the pleura.

Second Case; illustrating the mild variety.—James P—, aged nineteen years, of fair complexion, a stay-cutter by trade, and who has lived rather freely, was admitted into Colston ward, June 17, 1852, under the care of Mr. Lloyd. Two days before admission, the patient noticed a pustular elevation upon the upper lip, on the right side, and the whole of that half of the face swelled considerably in the space of three hours. He did not experience much pain, but the tension of the parts was very disagreeable. As the size of the lip and face, as well as the pain, went on increasing, the young man applied to the hospital.

On examination, the whole of the right side of the face was found oedematous, hard, pale-red, and glossy; the lip everted, and increased to about three times its natural size. The patient does not experience very much pain, except when the parts are pressed. The constitutional disturbance is not so great as in the preceding case; the tongue is clean, and the pulse 90, with tolerable power. Leeches, fomentations, and poultices were used in this case. Internally, the patient took the acetate of ammonia mixture, and mild purgatives. The symptoms were gradually subdued by the further use of leeches. Wine was allowed, and in the course of a fortnight the patient had quite recovered.

Third Case; illustrating the very simple variety.—Edward B—, aged sixteen years, a healthy, intelligent boy, following the occupation of silkmurcer's porter, was admitted June 17, 1852, into Kenton ward, under the care of Mr. Stanley. None of the above-mentioned patients, nor this boy, remember any irritating substance coming in contact with their lips. Two days before admission this patient noticed a little pustule on the groove of the upper lip, just above the red margin; the part swelled rapidly, and no sleep could be obtained. The pain was not very severe, but great inconvenience was experienced from the oedematous state of the lip and face.

When admitted, these parts were about twice their natural size, hard, red, painful, and brawny. The tongue was *clean*; the pulse 90, but with no power; the skin rather hot, but somewhat moist. Mr. Langdon, Mr. Stanley's house-surgeon, made a transverse incision across the red part of the lip, which yielded about half an ounce of pus, and soon afterwards the surfaces of the wound looked sloughy. A poultice was applied on the lip and face, and with very simple treatment, composed of light purgatives, broth, &c., the boy quickly recovered, and left the hospital five days after his admission.

It will be perceived that these three patients were received into the hospital on the same day: and since that period cases of this kind have been frequently admitted. The fatal issue has, however, been the exception, and recovery the rule. There is now in Darker ward, under the care of Mr. Stanley, a young man, about twenty-four years of age, presenting exactly the same symptoms as have been described of the first of the preceding cases; he is being treated in the same manner, but his recovery is doubtful.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

37. *Are Primary or Secondary Amputations to be preferred?*—Mr. G. J. GUTHRIE, the distinguished Army surgeon, in a recent lecture on some of the more import-

ant points in Surgery (*Lancet*, May 1, 1852), discusses the question at what distance of time after the receipt of an injury can amputation be performed most advantageously to the patient. His long and extensive experience and discriminating judgment entitle his opinions to great weight, and we, therefore, transfer to our pages his remarks on the subject:—

40. When the wound of an extremity is of so serious a nature as to preclude all hope of saving it by scientific treatment, that limb should be amputated as soon as possible.

41. An amputation of the upper extremity may almost always be done from the shoulder-joint downwards, without much risk to life, and, when necessary, the sooner it is done the better.

42. An amputation of any part of the lower extremity below the knee downwards may be done forthwith, with nearly an equal chance of freedom from any immediate danger, as of the upper extremity at or near the shoulder-joint.

43. It is otherwise with amputations above the middle of the thigh, and up to the hip-joint. They are always attended by considerable danger.

44. There can be no doubt that if the knife of the surgeon could in all cases follow the ball of the enemy, or the wheel of a railway carriage, and make a clean good stump instead of leaving a contused and ragged wound, it would be greatly to the advantage of the sufferer; but as this cannot be, and an approach to it even can rarely take place, the question naturally recurs: At what distance of time after the receipt of the injury or accident can the operation be performed most advantageously for the patient?

45. In order to answer this question distinctly, it should be considered with reference to two distinct states of injury:—

1st. When injuries require amputation of the arm below the shoulder-joint, or of the leg below the knee, these operations may be done at any time from the moment of infliction until the expiration of twelve or twenty-four hours, without any detriment being sustained by the sufferer with regard to his recovery; although every one, under such circumstances, must be desirous to have the operation over. The surgeon having several equally serious cases of injury of the head or trunk brought to him at the same time as too requiring amputation, may defer them more safely perhaps than the assistance he is also called upon to give to the other cases, the postponement of which may be attended with greater danger.

2d. This state embraces those great injuries, in which the shoulder is carried away with some injury to the trunk, or the thigh is torn off at or above its middle, rendering an amputation of the upper third or at the hip-joint necessary; and it is this or nearly this state which alone implies a doubt as to the propriety of immediate amputation, and demands further investigation. It is the state to which your attention is earnestly drawn for future observation.

46. It has been implied, if not actually maintained, that a man could have his thigh carried away by a cannon-shot without being fully aware of it, or, if aware of it, that it did not cause much alarm—in fact, that it did not materially signify, as to his apprehension, whether the ball took off his limb or the tail of his coat, or only grazed his breeches. An instance of this kind has not fallen under my observation.

47. A surgeon on a field of battle can rarely have a patient brought to him, requiring amputation, under less time than from a quarter to half an hour; a surgeon in a ship may see his patient in less than five minutes after the receipt of the injury; and to the surgeons of the navy we must hereafter defer for their testimony as to the absence or presence of any constitutional alarm and shock; and, if they occur, to what degree do they follow immediately after the receipt of such injury? The question must not be incumbered and mystified by a reference to all sorts of amputations after all sorts of injuries, but to the one especial injury—viz. that of the *upper half of the thigh*.

48. My experience, which may be erroneous, like everything human, has taught me, that when a thigh is torn or nearly torn off, by a cannon-shot, there is always more or less loss of blood, suddenly discharged, and which soon ceases in death, or in a state approaching to syncope. When the great artery is torn, this fainting saves life, for an artery of the magnitude of the common femoral

does not close its canal by retracting and contracting, as a smaller vessel does; it can only diminish it; and the formation of an external coagulum is necessary to preserve life, which the shock, alarm, and fainting, by taking off the force of the circulation, aid in forming; and without which the patient would bleed to death. An amputation, in this state of extreme depression, might destroy life.

49. If the cannon-shot, or other instrument capable of crushing the upper part of the thigh, should not divide the principal artery, and the sufferer should not bleed, it is possible he may be in the state alluded to, in which the patient, for he may not be called sufferer, is said to be just as composed as if he had only lost a portion of his breeches. Nevertheless, few have seen a man lose even a piece of his breeches by a cannon-shot, without perceiving that he was indisputably frightened.

50. Whilst some persons, under the loss of a limb high up, are reduced to a state of syncope, or nearly approaching to it, which renders them almost, or even entirely, speechless; others suffer extreme pain, and earnestly entreat assistance, under which circumstances, amputation should be performed forthwith. In the former, the administration of stimulants may render the operation less immediately dangerous.

51. Chloroform, or other similar remedies, may produce an effect in such cases yet unknown. Its careful administration may not destroy the ebbing powers of life, and may render an amputation practicable, which could not otherwise be performed without the greatest danger. It may be otherwise; the point, however, is to be ascertained, although in all cases of great suffering its use should be unhesitatingly adopted.

52. When the sufferer is brought to the surgeon at the end of half an hour, having lost a limb below the thigh or shoulder, by a cannon-shot, he will often be found in a state of such great depression as to be likely to be destroyed by the infliction of a serious and painful operation like amputation. This has occurred to me so often as to induce me to recommend delay for five, six, or even eight hours, if the unfortunate person did not suffer much, and appeared likely to be revived by the proper use of stimulants.

53. This recommendation originated from the fact, that as one seriously wounded man has as much claim as another to the attention of the surgeon, all could not be attended to at the same time; and the success following the deferred cases of amputation was as great, if not greater, than in those on which the operation was more immediately performed.

54. The advantageous results of *primary* amputations, or those done within the first twenty-four or at most forty-eight hours, over *secondary* amputations, or those done at the end of several days, or three or four weeks, has been so firmly and fully established as to admit no longer of dispute.

55. When an amputation is deferred to the secondary period, a joint is often lost. A leg which might have been cut off below the knee in the first instance, is frequently obliged to be removed above the knee when done in the second.

56. In the secondary period after great injuries, the areolar and muscular textures near the part injured are often unhealthy, the bones are in many instances inflamed internally, and their periosteal membranes deposit on the surrounding parts so much new ossific matter as frequently to envelop in a few days the ligatures on the vessels, and render them immovable, necrosis of the extremity of the bone following as a necessary consequence, protracting the cure for months.

57. Sloughing of the stump, accompanied by inflammation of the vein or veins leading to the cava, frequently take place. This state of stump is often followed by purulent deposits in and upon the different viscera, and principally in the cavities of the chest. Where febrile diseases are endemic, they often prevail; the constitutional irritation is great; the stumps do not unite, or open out if apparently united, and slough, and frequently after a few days implicate the veins.

38. *On the Surgical Operations usually adopted for Retention of Urine.*—The treatment of stricture of the urethra often presents so many difficulties, and

there is such diversity of opinion among surgeons as to the best course of procedure, that we are induced to present to our readers an abstract of a paper on this subject, recently read before the Royal Medical and Chirurgical Society, by EDWARD COCK, Esq., with a report of the discussion to which it gave rise, and which furnishes the opinion of some of the most eminent of the London surgeons in relation to the matter.

The author first dwelt on the difficulties which surround the question of what course should be pursued in those cases where an old chronic indurated stricture, recently closed by inflammation and congestion, defies all attempts to pass a catheter, and upon the failure which frequently attends the attempts of the surgeon to relieve such cases by the introduction of sounds, catheters, or bougies. He points out the three modes to which recourse may be had, when the urgency of the symptoms renders some decided interference necessary. First, that of forced catheterism; second, that of opening the urethra in the perineum behind the stricture; third, that of puncture of the bladder. There is nothing new in either of these measures for relieving retention. They may each possess certain advantages, and the circumstances of the case, and the condition in which we may be placed, may incline us to the adoption of either the one or the other. They have all their drawbacks; but, on the whole, the author is disposed to believe that the bladder may be reached with the smallest amount of pain, with the least risk of present or future danger, and with the greatest prospect of ulterior good, by puncture through the rectum. The first of these operations the author regards as in reality a mode of puncturing the bladder with a blunt instrument, tunnelling through the perineum under cover of the urethra; and he believes that the stricture is, in the majority of such cases, neither forced nor crushed, but that a new passage is made outside the urethra, which may either re-enter the urethra, or continue its course through the prostate into the bladder. The urgent symptoms may be thus relieved, but the after condition of the patient is not bettered, and it may be rendered even worse. The second operation of section of the perineum, the author thinks, is, when dexterously and successfully performed, preferable to forcible catheterism. The urine may be allowed to flow by the new channel, until the urethra has had time to recover itself from the injuries it may have sustained by previous manipulation, or from the irritation caused by the continual pressure of the contents of the bladder. But unfortunately the difficulties are often so great, in long-standing disease of the perineum, that the urethra cannot be reached, and great mischief, or even death, may result from the protracted operation. The author describes the proposed modification of this practice, called "cure of stricture by division," of which the principle consists in uniting the upper and lower permeable portions of the urethra by the division of the intermediate impermeable portion, and thus restoring the integrity of the canal. This, however, he thinks, is very rarely carried out; and that very often death is caused unmistakably from the injuries sustained during the operation. So convinced is the author, by experience and observation, of the difficulty which frequently attends the operation of opening the urethra behind the stricture, where the landmarks which should guide us are obliterated, that he has of late years abandoned the operation of incising the perineum, with a fixed determination to reach the bladder. In those cases where retention and extravasation render it necessary that an outlet should be afforded to the contents of the bladder through the perineum, he limits himself to making a free incision down to the region where the urethra may be supposed to be situated; and if he cannot then gently introduce a catheter through the wound into the bladder, he does not proceed any farther; and he has generally found that the urine has speedily found its way through the wound. With regard to the third mode of relieving the bladder, by puncture, the author brings forward cases to show puncture by the rectum safe and simple. Forty cases of operation by the rectum are related. In all of these, the operation was entirely successful, so far as the relief and the absence of any ill consequences from it were concerned. Seven deaths occurred, from various causes connected with the previous sufferings of the patients, as diseased kidneys, inflamed bladder, &c. In many cases, the author believes the operation to have materially tended to the restoration of the

patient, with a less amount of suffering, and at the same time more speedily and effectually, than could have been effected in any other way.

Mr. SOLLY concurred in opinion with Mr. Cock, that the operation described in the paper was a most valuable one in certain cases. He (Mr. Solly) had heard Mr. Cock describe it years ago, and had himself since performed it several times with success. He considered that this operation was one of the least dangerous that could be performed in cases of retention of urine from stricture. Cases, of course, occurred in which cutting down upon the urethra was advisable—as when the stricture was of traumatic origin; but where the canal had been much damaged, and where false passages existed, the operation of puncturing the rectum was the most advisable.

Mr. ARNOTT said, that although he was unable to speak in the same unqualified terms of approbation as the author of the paper and Mr. Solly had done, of the operation of puncturing the bladder through the rectum, he was yet able to add his testimony generally in its favour from a personal experience of five cases in which he had resorted to it. He considered that the Society was indebted to Mr. Cock for having brought the present collection of cases before it. He (Mr. Arnott) had only performed this operation in cases of retention of urine supervening on permanent stricture, when other means of relief had failed. But having witnessed incidentally its advantages in facilitating the subsequent treatment of the stricture which had rendered the operation necessary, he was prepared to receive with favour the suggestion to resort to it occasionally in the treatment of that disease. Before, however, he proceeded further in his remarks on this operation, he wished to observe that he thought Mr. Cock had expressed himself with too much severity with regard to the operation of what was called forcing the stricture, and also in regard to the operation of opening the urethra behind the stricture. Both of these proceedings, properly performed in suitable cases, were justifiable and safe. The operation of forcing a stricture was not so severe a proceeding as puncturing the bladder from the rectum, and it had some advantages. Indeed, if he had the misfortune to suffer from retention of urine as a consequence of stricture, he should, if in the hands of a competent surgeon, prefer that the stricture should be attempted to be forced before any opening should be made in the urethra behind the stricture, or the bladder be punctured through the rectum. What he wished to convey by the operation being “properly performed” was this, that if, upon trying to urge the catheter through the stricture, the urethra itself should give way, and be perforated, then that the proceeding should be immediately abandoned. So also with respect to opening the urethra behind the stricture; the best mode was not that usually performed, of cutting from the surface or skin inwards, but by putting the forefinger of the left hand into the anus, so as to depress it; then to introduce the point of a bistoury slightly curved just in front of the anus, and carry it directly inwards so as to strike the membranous part of the urethra; and then holding the instrument outwards, to divide all the superjacent parts. He (Mr. Arnott) had first seen this mode of procedure resorted to by the late Sir Charles Bell twenty years ago, and had frequently since successfully performed it. If in the operation you missed the urethra, then the operation of puncturing the bladder could be resorted to. With reference to the last operation, which had been employed at the Middlesex Hospital, he had not found it so entirely destitute of disadvantage as had Mr. Cock. Of the five cases in which he had employed it, one patient died, and on examination an abscess was found between the bladder and rectum in the track of the canula. Effusion of urine in this situation was a danger to be dreaded, and he had expected that it would have occurred in some of Mr. Cock's cases; and, gratified as he was at hearing the short abstracts of some of them read, he should like to look over the details of the whole before he could satisfy himself that the danger was not real. He could, perhaps, illustrate his views with respect to the different operations, by relating a case in which he had performed all of them in the course of a quarter of an hour on the same patient. In 1844, he was called one morning to an officer of Engineers, who had retention of urine from stricture, and who had had a similar attack some years before. The patient was six feet six inches in height, of large frame, and, being partially palsied on one side, was very cum-

brous to move. An unsuccessful attempt was made to introduce an instrument into the bladder. Large and repeated doses of laudanum, both by the mouth and rectum, were exhibited at short intervals, and a fresh attempt to pass a catheter was made at the end of some hours, but again without success. A small quantity of water had, however, dribbled away. The patient was now purged, cupped in the perineum, &c. On the following day, the quantity of urine passed was not considerable, yet the relief was such as to lead him (Mr. Arnott) to suppose that the difficulty of the case had been got over. On the following morning early, however, he was again summoned to the patient, and found that he had passed no water since the preceding afternoon; the bladder reached half-way up to the umbilicus, and he was greatly distressed. The case now admitted of no delay, and he accordingly attempted to force the stricture, but the urethra gave way, and the catheter was at once laid aside. He (Mr. Arnott) explained to the patient's brother, a physician, that he would now endeavour to open the urethra behind the stricture, an operation in which, in these cases, he had generally succeeded; but in the present instance he did not feel so confident, as there had not been much previous suffering from the stricture, or strain upon the parts, so that the urethra, posterior to the stricture, might not be dilated. If he failed in the attempt, he should then puncture the bladder through the rectum. The attempt to lay open the membranous part of the urethra was made in the way already described, but the urethra was not struck. The bladder was then immediately punctured through the rectum. He (Mr. Arnott) saw the patient twice during the day, when the urine was flowing freely through the canula; but the next day he was called to him again, and learnt that on the previous afternoon the canula had got displaced—it was, in fact, out of the bladder; and that no urine had passed either way since. The bladder was now full, and after a short and unsuccessful attempt to pass a catheter by the urethra, the bladder was again punctured through the rectum; the canula was kept in sixteen days, when an instrument was got through the urethra into the bladder; the case did well, and the patient was still living. In one instance it appears that Mr. Cock had failed to reach the bladder in the attempt to puncture it through the rectum, but failure to strike the bladder was not confined to puncture in this situation. Mr. Arnott had twice witnessed, in the hands of a very able surgeon, the bladder missed in the attempt to puncture it above the pubes; in one of these cases the trocar was reintroduced, and with success; he might add that both cases recovered.

Mr. Coulson said it was clear from the facts detailed in the paper that the operation of puncturing the bladder by the rectum was easy and safe of performance, but he was not equally convinced that the operation ought to be performed in cases like those mentioned by the author. Puncturing the bladder by the rectum for retention had never been very generally resorted to, because it left the condition on which the retention depended untouched. The late Mr. Liston, in his "*Operative Surgery*," says that he never performed the operation in question, and spoke in no measured terms of those who had recourse to it. In some of Mr. Cock's cases the catheter had been introduced not long prior to the operation, and he could not understand why it had not been retained in the bladder, and the operation of puncturing dispensed with. In one or more cases there was extravasation of urine, and he (Mr. Coulson) thought that the free and deep incisions in the perineum which were necessary to give relief to the extravasated urine would also have been a sufficient outlet for the urine from the bladder. Again, the author had recommended the operation on the ground that by the withdrawal of the urine from the urethra the stricture would yield; but it was delusive to expect this to be the result in all cases. He had punctured the bladder by the rectum in an urgent case of retention, dependent on an impermeable stricture of the urethra: at the end of three or four days the canula slipped out, and retention again occurred. The stricture was in the same position as before the operation, and was then successfully divided by the lancetted stilet. The conclusions which he (Mr. Coulson) arrived at were, that if the smallest instrument, like one of Mr. Symes's staffs, could be introduced through the stricture, it would be better to divide the stricture from without, and thus remove the cause of the complaint. If the stricture was so great that nothing

could be introduced through it, then he would prefer passing a grooved staff down to the stricture, making an opening into the perineum beyond the contracted part, passing a strong, straight director with a deep groove in the median line between the urethra and rectum, and passing a straight bistoury some way along the groove, and then cut outwards and upwards towards the staff which had been first introduced. Except, therefore, under the most urgent circumstances, scarcely admitting of the delay requisite for the performance of these operations, he did not think the measure which had been recommended by the author for retention of urine from stricture should be adopted.

Mr. SOLLY observed that Mr. Liston, before his death, altered his opinion as regarded this operation, as he (Mr. Solly) was present when that distinguished surgeon performed it, a few months before he died.

Mr. DE MORGAN said that he had not perused all the cases detailed by Mr. Cock, but they all supported the same views, and showed that the operations did not, as Mr. Coulson had remarked, remove the cause of the retention. In all operations, however, proposed for the relief of stricture, the urine, after a time, passed more or less by the natural passage, similar to what was observed in some cases lately read to the Society, of stricture of the colon, in which, some time after an operation had been performed for their relief, the feces began to pass through the intestine, and take their natural course. The operation, therefore, of puncturing the bladder in cases of stricture, was to some extent a curative agent as regarded the obstruction.

Mr. CURLING had given his best attention to the cases which had been briefly detailed in Mr. Cock's paper. As far as he could judge, he had no objection to make to the puncture of the bladder in the instances cited. In the second case, it did not seem quite clear whether the abscess in the perineum existed at the time of the operation or had formed afterwards; but he did not believe that so excellent and experienced a surgeon as Mr. Cock would venture to puncture the bladder by the rectum in a case of retention of urine with perineal abscess. He would relieve the patients by a free opening at the part. Mr. Curling agreed with the author of the paper, that the operation was more free from risk than was generally supposed; and in giving it the preference of forced catheterism, he was quite sure that Mr. Cock, in treating of the latter proceeding, did not object to the perforation of a stricture by the skilful use of the catheter, but to the violence inflicted when the instrument was driven out of the passage, the course of which, in its progress to the bladder, had been so graphically described in the paper. Still, he was surprised to find that Mr. Cock had to puncture the bladder in so many instances at the hospital of which he was surgeon. At the London Hospital, cases of retention of urine were of very common occurrence amongst the dissolute population in the neighbourhood, and no less than 146 cases had been admitted in the past year; yet this operation was very rarely performed, and he did not believe the bladder had been punctured a dozen times during the past twelve years. He attributed this to the remarkable success attending the general treatment without instruments, by means well known to the Fellows of the Society. After the retention had been relieved in this way, and the local irritation had subsided, the cure of the stricture could then be conducted with as much advantage as after the bladder had been punctured by the rectum. In the very few cases in which he had found it necessary to operate, he had punctured the bladder above the pubes, which he believed was as simple and as free from danger as the puncture by the rectum.

Mr. GAY, from the experience he had had of the practice of puncturing the bladder from the rectum, could give it his unqualified support, but in a certain class of cases only, viz., those in which spasm and inflammation suddenly supervened in old stricture, and retention, with all its evils, followed. Amongst the cases detailed in Mr. Cock's interesting paper, he had not been able to detect many of this kind. It was now six years ago that he (Mr. Gay) was called to see an old gentleman labouring under the severest symptoms arising from retention. He had suffered from stricture for years; and the day before, in consequence of a debauch and exposure to cold, he found himself unable to pass his urine. Many futile attempts had been made to introduce a catheter, by which the urethra had become seriously lacerated. Hot baths, leeches, and opium,

had also been employed: and it was not until the symptoms of constitutional irritation had reached a fearful height that his assistance was called for. Under these circumstances, he thought it unwise to interfere further with the urethra in any part of its course, but to attend to what was infinitely more urgent, viz., the over-distended state of the bladder. Notwithstanding the bad odour into which the operation of puncturing by the rectum had fallen, he (Mr. Gay) determined, though not without much anxiety as to the results, to perform the operation. It was followed by great and immediate relief; and a further employment of palliative remedies to the urethra caused the spasm and inflammation to be so far reduced by the following day, that the old gentleman began again to pass his urine by the natural channel. In a few days more he was convalescent, and nothing was heard whatever of the wound of the bladder made in the operation. Mr. Gay thought the state of the urethra, in such cases, and under such a conjunction of circumstances, to be of all others most unfavourable to catheterism; and from the results of this case, and others which had since fallen under his observation, he did not hesitate to recommend the evacuation of the bladder by these means, whenever that viscus might become so distended as to occasion severe constitutional and local irritation. He had punctured the bladder since in four or five other cases; and so convinced was he of the comparative innocence of the procedure, that he had on one occasion had recourse to it three days following, and this without any bad results. The palliative local treatment of these cases appeared to be more successful after the bladder was emptied, than if employed during its distension, and generally resulted in the patient's being able to void his urine in the course of twenty-four or forty-eight hours. With regard to another class of cases, in which Mr. Cook had been in the habit of puncturing the bladder, viz., those of chronic and permeable stricture, he (Mr. Gay) had had no experience; but, with Mr. Coulson and Mr. Arnott, he could not see its utility. It appeared to him that the result of this practice was to add to an old stricture the undesirable complication of a fistulous passage behind it, which could by no means be of any service towards curing the original disease. He was of opinion that judicious catheterism might in these cases accomplish as much as could be expected. Mr. Gay felt that on so important and interesting a subject, every surgeon who had had any experience was bound to communicate it, for the purpose of arriving at some really practicable conclusion; and it was this consideration that had led him to make these remarks.

Mr. HODGSON deprecated the employment of such violence as had been described in the use of the catheter for the relief of retention of urine in cases of organic stricture, but advocated the employment of that instrument under such circumstances in a cautious manner. By very long-continued but moderate pressure, the catheter might often be passed, even through long and obstinate strictures; but great patience and perseverance were requisite both on the part of the patient and operator, who should also possess the tact and knowledge to enable him to guide, with his fingers in the perineum, the point of the instrument in the track of the urethra. In the course of his experience he had never found it necessary to have recourse to tapping the bladder, either per anum or above the pubes, for the relief of retention of urine. With regard to the former of these observations, he did not regard it as quite of that simple and harmless nature that had been represented. In cases of old stricture the bladder was often very much thickened and contracted in its coats, and incapable of much distension. This state would render the operation difficult, and in some instances unsuccessful. There was also danger of wounding the vesiculae seminales. He mentioned an instance in which this was believed to have happened, and the inflammation having extended along the vas deferens produced suppuration of the testicle. In another instance the tube slipped out of the opening in the bladder, and could not be replaced; the patient derived only very little relief from the operation. In his opinion, this operation should only be undertaken by experienced and cautious hands.

Mr. PRESCOTT HEWETT would confine himself in his remarks entirely to the question of operating for retention of urine from stricture. He would at once say that the opinion which he had formed was, that few, very few cases of re-

tention of urine from stricture imperatively demanded an operation for their relief, and he was surprised to find that so many cases of this kind had required an operation in one hospital alone during the last few years. Mr. Curling had stated that, in the London Hospital, operations for retention of urine had of late years been of very rare occurrence, but he (Mr. P. Hewett) would go a step further, and say confidently that, for the eighteen years during which he had been connected with St. George's Hospital, not a single instance had occurred in which it was found necessary to resort to an operation for the relief of retention of urine from stricture; and yet, among the large number of cases of this kind yearly admitted into that hospital, were some of a most severe and urgent character. He had necessarily been obliged to operate upon cases of extravasation from rupture of the urethra with retention, which had been brought into the hospital in that condition; but this was altogether a different matter, and one in which the treatment admitted of no doubt. For many years past, at St. George's, long antecedent to his (Mr. Hewett's) going there, cases of retention of urine from stricture had been treated, when catheterism failed, with opium and the warm bath; and for the last eighteen years, to Mr. Prescott Hewett's own knowledge, as already stated, and for some years more, no single instance had arisen where an operation had been required. On one occasion, and on one alone, had he (Mr. P. Hewett) seen even anything like an approach to an operation. In this case the patient, a man of intemperate habits, had been admitted into St. George's Hospital with retention of urine from stricture, and some false passages which had occurred during the repeated attempts at passing a catheter into the bladder. Another attempt to get an instrument into the bladder was cautiously made by the house-surgeon; but, as this failed, a warm bath was ordered, and some laudanum given by the mouth, and under this treatment the patient soon became easier, and then passed a small quantity of water. Shortly afterwards, however, complete retention again recurred; and as no relief appeared to be derived from the treatment, the surgeon of the week was sent for, and another attempt to pass an instrument was again made, but this also proved fruitless. Under these circumstances, as the bladder was getting largely distended, a question arose as to the propriety of tapping this viscus through the rectum; but as the patient, notwithstanding the great distension of the bladder, did not appear to be suffering much, it was ultimately decided that another trial should be made with a full dose of laudanum, two drachms of which were immediately given by the rectum, and within an hour afterwards the patient began once more to pass his water, and gradually emptied the bladder. Let opium be freely given, and from what he had witnessed, Mr. Hewett had no hesitation in stating that an operation in such cases would be very, very rarely indeed required. In conclusion, Mr. Hewett stated that he had never seen any bad effects arise in these cases from the free administration of opium, notwithstanding that he had in some instances given drachm doses every hour for three or four hours consecutively.

Mr. CHARLES HAWKINS thought that there should be further discussion on the important paper before them, for he was not satisfied that it should go forth to the profession that the Society entertained so favourable a view of the operation advocated by Mr. Cook, as the remarks of the preceding speakers would naturally give rise to. He (Mr. Hawkins) was by no means satisfied that cases of stricture generally required the operation to be resorted to, and he must say he had never heard a paper read in that room which had more astonished and surprised him, detailing, as it did, forty cases in which puncture of the bladder had been resorted to, either by the author or his colleagues. Now, he (Mr. Hawkins) had known St. George's Hospital for the last twenty years, and he had never known this operation to be performed there, nor could he learn that it had been resorted to for nearly thirty years. He also knew that surgeons in extensive practice in the West-end of London had found it necessary to have recourse to it only about half a dozen times during the long period of forty years; it was therefore to him most extraordinary that so many cases could be got together from one hospital or from the practice of those connected with it. Indeed, until the remarks of Mr. Curling, he (Mr. Hawkins) imagined that the operation must be peculiar to the other end of London, but it appeared, that

though well placed for bad cases of stricture, the London Hospital could produce no such number. He had been surprised to hear of the advantages of this operation in cases of spasm, for these were surely not the cases in which Mr. Cock recommended it, for he appeared to confine its use to those old cases of permanent stricture where, from constant attacks of retention of urine and its consequences, the kidneys and bladder became diseased, and the life of the patient placed in jeopardy. In such cases, if an operation were required, then that recommended by Mr. Cock, he (Mr. Hawkins) considered the best. He thought, however, that at the present time, when so many plans of treating stricture were being placed before the public, it was most desirable that the Society should not, without due consideration, give its sanction to any particular plan. He hoped that the older and more experienced Fellows of the Society would express their opinions in reference to this operation: with this view he had addressed the Society. It was not that he did not think that, when an operation for the relief of retention of urine became necessary, that recommended by Mr. Cock was perhaps the one attended with least difficulty and followed by fewer bad consequences than any other, but of the results he could say nothing of his own experience. He could call to mind but one case that had come under his own care in which the bladder was punctured for retention of urine. In that instance the operation was successfully performed above the pubis. He had been in the habit of passing an instrument for that patient since, without difficulty. Of course, he did not allude to cases in which an operation had been performed for the cure of stricture, where the obstruction was permanent—usually from accident—and performed not from the immediate relief of retention of urine. He had assisted at operations in about half a dozen of such cases, the urethra being cut into through the perineum. He had certainly been surprised to hear of the great amount of bad surgery which Mr. Cock appeared to have met with, for such did not commonly come under his (Mr. Hawkins's) observation.

Mr. HOLT remarked that he entirely concurred in the observations made by both Mr. Curling and Mr. Hewett, and expressed his surprise at the large number of cases in which Mr. Cock had found it necessary to have recourse to an operation for the relief of retention of urine. He had been engaged for the last ten years in endeavouring to procure cases of stricture of the worst possible description, and although a large number of cases of retention of urine in all their varieties had come under his notice, yet he had only had recourse to operative procedure in one instance, the operation consisting in opening the membranous portion of the urethra, which formed an elastic tumour behind the stricture, easily detected and easily punctured. If the ordinary palliative treatment were had recourse to, and the first effort failing, no further attempts to pass a catheter were indulged in, in almost every case the urine would in a few hours escape, and in sufficient quantities to obviate all the urgencies of retention, and in a few days (the parts in the intermediate time having become tranquil) a catheter could, in almost every instance, be passed. Were he called upon to perform any operation, he should have no hesitation in preferring, from its simplicity, facility, and the immediate relief it afforded, that recommended by Mr. Cock. He considered the operation of opening the urethra behind the stricture a most hazardous proceeding, and ought only to be had recourse to in cases where the membranous portion of the urethra could be distinctly felt distended by urine. As a proof of this assertion, he might mention a case in which this operation had been attempted by one of the ablest surgeons of the day, a gentleman of vast experience, and who formed one of the heads of the profession. The patient, from continued disease, died the same evening, and the *post-mortem* examination revealed the urethra completely transfixed, the knife having passed between the bladder and symphysis pubis. Respecting the operation of forced catheterism, he was quite assured Mr. Arnott would not sanction that operation in the common acceptation of the term, or, as recommended by some surgeons, that a catheter should be forced into the bladder *vi et armis*, no matter what strictures intervened. Such a course of proceeding could only be attended with hazardous results, and probably the death of the patient. In conclusion, he felt assured that by patience and proper medical

treatment the cases in which it might be necessary to perform any operation would be very limited.

Mr. ARNOTT had hoped, in reference to what had fallen from Mr. Holt, that he had sufficiently guarded himself against the supposition that he was in favour of the operation of forcing a catheter into the bladder. He had expressed his opinion, that the attempt to force a stricture was a proper proceeding in certain cases; and he would again state his meaning, which was this—that, with a short silver catheter, gentle but steady pressure should be made on the stricture; if it gave, so much the better; but if the urethra was perforated, as the surgeon would at once be aware of by the sensation communicated to the fingers, and by the bleeding, the catheter should be at once abandoned. He (Mr. Arnott) agreed in the opinions that had been expressed, that the opening of the urethra behind the stricture, in the way in which it was usually performed, by cutting from the skin inwards, was an operation at once difficult, tedious, and uncertain. He had himself experienced these difficulties, and had witnessed them in surgeons of acknowledged eminence. He had also seen the occurrence described by Mr. Holt, of the bladder being opened at the anterior part of its neck. The plan of operating by the curved bistoury was easy of performance and very simple.

Mr. CURLING rose to explain that in the cases in which the bladder had been punctured at the London Hospital, he included cases of retention of urine from enlargement of the prostate gland, which had been injured by instruments, and attended with hemorrhage into the bladder. He would also mention a remedy for retention from stricture, which was not applicable to persons of debauched habits and broken down constitutions, but succeeded remarkably well in robust sailors and others. He alluded to the administration of croton oil; as soon as the remedy began to act on the bowels, the patient was able to pass water.

Mr. SOLLY explained that he recommended the operation in cases of permanent stricture, with enlarged prostate, and where great injury had been committed on the urethra.

Mr. COCK, in reply, said that the operation in question was recommended by him and others as a means to rescue patients from the effects of retention when all other measures had failed. Some misapprehension appeared to have arisen from the number of cases he had brought forward. If his paper had been read in full, it would have been found that only twenty-four cases were his own, and that the others had been furnished by his friends. It might be supposed that he had resorted to this operation rashly. He had not done so, however, and had employed it only as a last resort, except in cases of old, impervious, hard strictures. The cases detailed had extended over many years, having been selected from an immense number of cases of retention of urine. He did not think such severe cases of impermeable stricture were met with at the west-end of the town. He had endeavoured to show that this operation was only to be had recourse to in the severest cases, when every other palliative measure had failed; indeed, he was of opinion that he had used palliatives too long. He had mentioned three modes of proceeding for the relief of retention of urine: the first, by forcible dilatation; the second, by cutting into the urethra between the stricture and prostate, respecting which he explained its deficiencies and dangers, all of which were great, and frequently led to failure; the third, which he had mentioned, without detracting from the utility of the others, as being more simple, less painful, and more likely to succeed. Fistula had been spoken of as a drawback; but he (Mr. Cock) had never known of an instance of this, when the permeability of the urethra had been restored. One of the virtues of the operation was obtaining this persistency as a sort of safety-valve, until a free passage per urethram had been secured; there was often some difficulty in securing its patency until the canal of the urethra allowed the urine to flow through it. Some of the cases which had been read would illustrate this point. There is not a fistula through which urine distils; but when the bladder is distended, the impulse to evacuate its contents ensues, and then the urine is discharged in a gush by the rectum, instead of by the urethra; and it is a great comfort to the patient, after enduring the suffering from such a condition of the urinary organs, to be able to discharge the contents of the bladder in a gush.

There is one other point which he (Mr. Cock) wished to allude to: it seemed to be denied by Mr. Coulson and by Mr. Gay, that relieving this state of those parts places the strictured portion of the urethra in a better condition for a cure to be effected than previously existed. This denial did not accord with the results of his own experience; every operation by means of which the contents of the bladder can be more freely discharged than was previously the case, must sooner or later place the urinary organs in a better condition; the urethra being relieved from the distress and strain upon it, and consequently the induration and other signs of disease gradually lessen and disappear.—*Lancet*, May 1, 1852.

39. *Treatment of Cancer*.—ALEXANDER URE, Esq., in an interesting article on cancer (*London Journal of Medicine*, Aug. 1852), says: It may be laid down as an indisputable fact that, in the present state of science, cancer is quite incurable. But is the surgeon, on this account, to abandon the patient entirely to his fate? Certainly not; he may palliate where he cannot cure.

The plan chiefly resorted to for the removal of external cancers is the operation by the knife. This expedient ought only to be adopted where the surgeon has a well-grounded hope of abating the suffering without shortening the life of the patient; otherwise it is unjustifiable. Many condemn the operation, without taking into account the relief which it frequently affords. It is no uncommon thing to see patients from whom a cancer has been opportunely extirpated, recover a healthful complexion, regain their strength and spirits, and cease to suffer for several years. Even in less successful cases, that is, where life has not been apparently prolonged, the patients have been exempted from a painful, a loathsome, and a lingering death. Moreover, if there be good reason to believe that the local malady, in proportion as it gains ground, increases the tendency to infection of the system, it is evident that a patient who has undergone the operation is in nearly the same condition as an individual simply predisposed, and without any manifest cancerous development.

The surgeon, therefore, may conscientiously operate, when there is a clear prospect of removing the whole of the adventitious structure; when the disease is established, and making distinct progress, and the pain very distressing. Scirrhus tumours are less prone to relapse at an early period than those of the encephaloid type. The operation is contraindicated when well-marked signs of cancerous cachexia are present, and when other tumours are perceived at some distance from the original seat of the malady. If the breast be the organ affected, an operation is objectionable, when the tumour is adherent to the skin or to the walls of the chest, when the nipple is retracted, and when the lymphatic glands, more especially those near the clavicle, are implicated in the disease.

One would be less disposed to operate on a person stricken in years than on one at a less advanced period of life; and, although it is in general advisable not to delay the operation, still, an exception may be made in the case where the patient suffers scarcely any inconvenience, where the progress of the tumour is very slow, and there is no obvious tendency to spread by radiation.

In performing the operation, the fundamental rule is to remove every portion of the diseased structure, and to insure this, the whole extent of the wound ought to be carefully searched, in order that none be left. Whenever practicable, it is important that the edges of the wound be brought into direct apposition, and thus retained, so as to procure immediate union. After the wound is healed, the application of collodion is useful in promoting the contraction and prompt consolidation of the cicatrix. It likewise shields the tender cuticle from the air, and from risk of abrasion. With this view the collodion is to be pencilled over the surface, twice or thrice a week regularly for some time. I was led to adopt the practice from observing that patients very often feel uneasiness in the cicatrix on change of weather, and also that secondary cancerous deposits are frequently met with in that situation. Hence the propriety of obviating every source of local uneasiness or pain in individuals of a cancerous habit.

As a general rule, excision is the most eligible mode of extirpating cancer-

ous tumors. The operation, moreover, since the introduction of chloroform, is without pain. Nevertheless, the surgeon will occasionally meet with cases in which the employment of the knife is inadmissible, or where, if admissible, the patient refuses to submit to it. Under such circumstances, resort may be had to the escharotic plan of treatment, provided the disease be circumscribed. One of the most efficient escharotics is the chloride of zinc. Its application, however, is attended with much pain. Several years ago, in some researches on cancer, published in the *Medical Gazette*, I pointed attention to the fact that chloride of zinc has a remarkable affinity for albumen, and, in virtue of this affinity, sought to explain its action when placed in contact with cancerous growths, which are composed in a great measure of that proximate element. Chloride of zinc is indeed a most energetic caustic, and requires to be employed with discretion. Full instructions respecting the manner of applying it are given in an article of mine on "Caustics and Canterization," which I published in the *Cyclopædia of Surgery*. It is especially useful in the instance of cancerous sores, accompanied with bleeding fungosities and fetid ichorous discharge. Ulcers of this nature, "the mere despair of surgery," have thus been brought to cicatrize. Although the cure be but fleeting, still, a few months of calm and apparent health are no little boon to a patient so circumstanced.

I have likewise employed quicklime as a caustic with good effect. It keeps up a kind of smouldering heat in the part. It is slower in its action, but productive of much less pain than the chloride of zinc.

With regard to general treatment, I would briefly observe, that the leading indication is to support the strength of the patient. M. Andral ascertained that one of the most constant effects of cancer, when it has lasted for some time, is a decrease of the globules of the blood.* Now this is precisely what occurs in exhausting diseases. For this reason, all measures of depletion ought to be avoided, or used with the utmost reserve, should any inflammatory ailment supervene. Benefit has been derived occasionally from the administration of cod-liver oil, alternated with chalybeates, should there be any tendency to anæmia.

40. *Excision of Cancer*.—Dr. W. H. WALSHE, in a clinical lecture (*Medical Times and Gazette*, Aug. 28, 1852), remarks: "As concerns excision, all I have seen within the last ten years but confirms the inference to which I was formerly led by the fair examination of facts, namely, that the operation neither cures the disease, nor even prolongs life, except in instances so rare, that they can scarcely be assigned a numerical value."

41. *Treatment of Lupus Exedens*.—The following case is reported in the *Medical Times and Gazette* (August 7, 1852), as illustrating the treatment pursued by Mr. STARTIN in the Hospital for diseases of the skin.

On February 25, 1852, Emma Munday, aged 25, of light complexion, was admitted as an out-patient, under the care of Mr. Startin. For eight years past she had suffered from the eroding form of lupus on the tip and left ala of her nose, both of which parts were considerably destroyed. The ulcer had ragged, firm edges, and was surrounded by flat, indurated tubercles, of a violet colour. During the first two years, she stated that the disease existed as a single, broad-based, firm tubercle, covered with desquamating layers of epidermis, and which gradually took on ulcerative action. Since that time it had slowly but steadily progressed, in spite of the variety of treatment which had been tried. Her home was in London, but she had, in hopes of benefit, paid long visits to the country, both inland and at the sea-side. As, however, is usually the case in this form of the disease, change of air had always aggravated her complaint.

Treatment.—A solution of the nitrate of mercury in concentrated nitric acid† was freely applied, with a glass brush, to the whole diseased surface, including all the surrounding tubercles, and over this was painted a thin coating of prepared collodion. She was ordered to take a teaspoonful of cod-liver oil three

* Essai d'hématologie pathologique, Paris, 1843.

† R. Hydrargyri ʒj, acid nitrici ʒij; solve.

times a day, with a pill every night containing a grain of calomel and a third of a grain of opium.

March 4. The whole surface suppurating freely, the epidermal covering of the tubercles being quite destroyed. An arsenical powder,* made into a paste with water, was thinly applied. To continue the medicines.

During the first three months, one or other of the caustics was usually applied every fortnight, though often in very small quantity; the acid being selected for any fresh tubercles which appeared, and its effect followed up by the paste until the raw surface took on a new and healthy action. The constitutional treatment was continued up to July 20, when she was dismissed quite cured, all surrounding thickening having disappeared, and a pale soft cicatrix being all that was left to mark the seat of past ravages. The mercurial, though continued so long, had not produced ptyalism, or any other unpleasant effect, save once or twice a slight attack of griping pains, which subsided on omitting the pills, which she had been directed to do occasionally. In constitutional vigour she improved throughout the treatment, and when discharged she was stout, and expressed herself as feeling unusually strong and well.

42. *Local Treatment of Ulcers of the Leg.*—II. T. CHAPMAN, Esq., in a paper in the *Medical Times and Gazette* (April 17, 1852), makes some sensible remarks upon the local treatment of the various kinds of ulcers of the legs. In regard to the application of blisters to *callous ulcers*, Mr. C. remarks:—

“Instead of applying a blister large enough to cover the ulcer and a considerable portion of the surrounding skin, I found it quite sufficient to paint, with a camel’s-hair brush dipped into acetum cantharidis, from a quarter to three quarters of an inch of the skin at the margin of the sore, making this streak wider or narrower in proportion as the induration extended to a greater or less distance from it. When the integument itself is in a callous, horny state, several coatings of the liquid may be required; and it should be allowed to dry before the leg is dressed. It rarely happens that much inconvenience is felt during the action of the blistering fluid, the patient being able to bear the pressure of a bandage lightly applied, and to take moderate exercise; sometimes, however, it causes a good deal of pain, and it becomes necessary that the limb should be laid up for twenty-four hours. Within this period vesication is usually accomplished to the requisite extent, and the detachment of the thickened cuticle, together with the flow of serum from the exposed surface, lowers the elevated margin quite as effectually as the larger blister.

“But the rise of granulations which ordinarily follows the dispersion of the indurated sub-stratum of an ulcer, is only the first step in its progress towards healing; and unless the sore be still carefully tended, it will speedily relapse into its former indolent or callous state. In all cases, therefore, as soon as this step is gained, no time should be lost in applying either Baynten’s bandage, or the simple substitute for it which I employ; since upon no other after-treatment can we so confidently rely for bringing about a sound and lasting cicatrization.

“When most successful, a repetition of the blister is often called for, the margin of the sore manifesting a disposition again to become thickened and indurated as it decreases in size.”

The following is Mr. C.’s summary of his remarks on first, of the comparative value of rest and support by bandaging in the treatment of ulcers; and, secondly, of the relative position which topical applications ought to hold with respect to these two principles:—

“It appears, then, *first*, that although *both* rest and support are especially adapted to counteract that morbid condition which is the substantial source of the intractability of ulcers, on the leg, almost all writers on the subject agree in expressing great doubts of the permanence of the cure accomplished under the influence of the former. But, were they equally to be relied on for completing and maintaining the cure, in by far the majority of cases the circum-

* R. Hydr. chlorid. ʒiiss, hydr. bisulph. et acidi arseniosi, āā gr. v. Misce, fiat pulvis.

stances of the patient absolutely prohibit the efficient employment of rest. On the score, therefore, both of its superior efficacy and of its expediency, the weight of experience may be very decidedly quoted on the side of support by bandaging.

"And, *secondly*, if Whately and Baynton, by demonstrating that careful and judicious bandaging is capable of superseding topical remedies altogether in a very extensive range of cases, exposed, on the one hand, the fallacy of that exaggerated opinion of their virtues which was formerly entertained, it is clear, on the other, that they fell into the opposite error, and formed much too low an estimate of their real claims to consideration. And this mistake not only rendered their own practice less successful than it might otherwise have been, but has contributed to turn the scale once more in favor of rest employed in combination with them. Many of them are unquestionably very serviceable auxiliaries to both rest and support; the more important are essentially necessary as preparatory measures for the latter. But the fullest recognition of their true claims in no way brings them into competition with either principle, in relation to which they are no more than subsidiary forces, and ought never to have been raised to the rank of equivalents.

"To come back, therefore, to the point from which we started, 'instead of limiting our resources, by taking up and advocating any one remedy or line of practice exclusively,' I contend that, while we show a readiness to avail ourselves of *all* special measures, constitutional as well as local, which are calculated to meet the numberless exigencies of the complaint, the bandage, properly constituted, must ever be looked upon 'as the necessary superaddition to, or complement of,' all other means of cure whatsoever."

43. *New Method of Reducing Strangulated Hernia.*—Dr. T. A. WISE gives (*Monthly Journal Med. Sci.*) the following particulars regarding a new method of reducing strangulated hernia: "While I had charge of a hospital in India, an elderly man was brought to it with a strangulated inguinal hernia. After in vain employing the usual means of reduction, I was preparing to liberate the gut with the knife, when a Mussulman gentleman suggested that the following method should be first tried, as he had seen it successful. As it appeared most simple and effective, I at once proceeded to try it. The patient was placed upon a table, and a long sheet, folded several times on itself, was carried round the lower part of the abdomen of the patient, was twisted on itself in front, and again on the sides, so as to enable an assistant, standing on each side of the patient, to hold the extremities of the sheet, and to pull them gently upwards, or towards the patient's head, while a third assistant held the feet steady, and a surgeon used the taxis.

"As the gut immediately above the strangulated portion was superficial and distended with air and liquid, it was drawn upwards with considerable force from the hernial sac, which was assisted by the surgeon using the taxis; when the strangulated portion was immediately reduced.

"This simple method may, in a very large proportion of cases, be employed with perfect safety, and at an early period, before inflammation and thickening have complicated and increased so much the danger of the operation, which is thus rendered unnecessary."

44. *Puncture of the Abdomen in Tympanites.*—A case in which tympanitic distension of the intestines, complicated with obstruction, was beneficially treated by puncture, has been witnessed by M. LABRIC, who has made it the basis of a thesis, in which he has collated and commented upon all the instances of the kind which he could find on record.

In tympanites, the gas may accumulate either in the intestines, which is the most usual site, or in the peritoneal cavity, which is a much more exceptional occurrence. The operation of tapping the intestines under these circumstances, is frequently performed in the lower animals, more particularly bullocks and sheep, in which, after a large repast upon green food, great gaseous distension of the stomach not unfrequently occurs. The veterinary surgeons perform the

operation with a common trocar and canula, and the relief is often immediate and permanent.

Much difference of opinion, however, exists as to the propriety of the operation in the human subject, peritonitis being dreaded as a likely result; but M. Labrie very justly objects to this apprehension, as uncalled for, as in nowise more likely to follow tapping for tympanites than for ascites, in which latter disease its occurrence is quite exceptional.

For the performance of puncture, the needle and the trocar have been respectively recommended; the author, however, prefers the latter, taking care that it is of a small size, such as is used as a means of exploring doubtful tumours. The only precaution required is to choose the most prominent and sonorous spot, at which it is known that the bowels are closely in contact with the abdominal walls. The author relates his own case and three others. In all, the relief was most marked and grateful to the patient: but as they were instances of insurmountable intestinal obstruction, in which the tympanitic distension was but one symptom, the ultimate result was of course fatal.—*Proc. Med. and Surg. Journ.* July 21, 1852.

45. *Cicatrices of Burns*.—Dr. W. V. PETTIGREW recently read an interesting paper before the Medical Society of London on the cicatrices of burns, where destruction of the skin had taken place. He prefaced his observations by alluding to the structure of the skin, more especially to the examination of the cutis vera. This portion of the tegumentary membrane was chiefly made up of white and yellow fibres; the former inelastic, inextensible, glistening, wavy, and cylindrical, averaging in diameter about the 15,000th of an inch; the latter elastic, extensible, sometimes cylindrical, at others flat, and varying from the 1-5th to the 10,000th of an inch in diameter. Dr. Pettigrew then explained the apparent anomaly of fibres of exactly opposite properties uniting to form one expansile and elastic webbing over the body, subject to every variety of change, thus: The white fibres, upon careful dissection, were found to consist, at the under part of the skin, of straight fasciculi, from the 3000th to 10,000th part of an inch in diameter; the fibres of these fasciculi afterwards were continued in spiral form, until they terminated at the under surface of the papillary layer; the yellow fibres were like a piece of India-rubber, elastic of their own nature, and abundantly intermixed; thus, the white fibres were elastic by position, and the yellow by their own peculiar property. This was illustrated by the experiment of drawing out a piece of India-rubber; then taking a straight piece of wire which was inelastic, coiling it up into a spiral form and thus rendering it elastic by position. The examination of a portion of cicatrix showed the regenerated white fibres to be hypertrophied, dull in colour, arranged in long straight fasciculi, very slightly spiral, and fixed to the parts below that had undergone more or less injury from the burn. Dr. Pettigrew had never yet been able to detect the regenerated yellow fibre, although he had industriously sought for it, but would not assert that it was never regenerated. With respect to the treatment of cicatrices, these, when recent, under careful mechanical treatment, generally present a decent and tolerable appearance: but, the case being lost sight of by the surgeon, gradual deformities arise, and the patient is at length compelled to seek assistance, rarely, however, from the surgeon who had first the care and anxiety of the case. Dr. Pettigrew referred to a variety of treatments, all of which he had himself tried with various success: 1st. Mr. White's method of dividing the bands and adhesions underneath the integument; this, in Dr. Pettigrew's hands, had appeared to succeed at first, but they afterwards returned. Mr. White's cases were admirably reported in the *Provincial Medical and Surgical Journal*. 2d. Simple division of the bands, touching the edges of the wounds when in course of healing with nitric acid. Cases were referred to: some successful, others failures. 3d. Extirpation of the cicatrix itself. This was of no use, unless the edges of the skin could be fairly brought together without tension, which might be partly averted by incisions being made in the neighbouring skin parallel with the excised scar. 4th. A method of treatment which attracted particular attention and observation from the members throughout the evening; it was applicable to cases where

fingers, or toes, or limbs were adherent either to each other or to the trunk. The operation consisted in perforating the contracted or webbed part with a trocar, and then inserting a piece of gutta serena, or any other suitable material, through the opening; the edges were allowed to heal, like the perforation in the lobe of a lady's ear (from which Dr. Pettigrew took the idea), and the remaining portion was then slit down. Two cases were related in which this operation had been perfectly successful—one in the lip, the other between the fingers. The last method of relief alluded to was that of freely dividing the cicatrix, and transplanting a healthy piece of skin, borrowed from a neighbouring part, into the gap caused by the incision. Two very interesting and successful cases were mentioned; one performed by Dr. Pettigrew, at the latter end of 1847, on the neck of W. S.; the other, more recently, on the lip of Miss G. The paper was finished by observations of a practical nature, referring especially to dressing the wounds, the temperature to be maintained, the ligatures, the erysipelas to be dreaded, and other matters. The paper was abundantly illustrated by large diagrams.—*Med. Times and Gaz.* Aug. 28, 1852.

46. *Luxation of the Sacrum*.—An instance of this very rare accident is reported by M. FOUCHER (*Revue Médico-Chirurgicale*), in the case of a man who endeavoured to commit suicide by throwing himself beneath the wheels of a heavily-laden wagon. After death, which occurred at the end of a week, the chief appearance was, a dislocation of the sacrum forwards into the cavity of the pelvis. The ilia were also fractured. Similiar cases are on record; one, for instance, in the *Mémoires de l'Académie de Chirurgie*, tom. iv. p. 91, in which the accident occurred from the falling of a sack of wheat upon the pelvis; and another is published by M. Laugier, in the *Bulletin de la Société Anatomique*, Feb. 1850. In some other examples reported the luxation seems to have been the result of disease.

47. *Cases of Atresia Ani in the Adult, with Preternatural Anus*.—Dr. DEUTSCH has met with two of these rare cases. The first occurred in an unmarried woman, æt. 29, whose corporeal development seemed, however, rather that of a girl of 15. She, however, enjoyed good health until seized with a nervous fever. While she was in an unconscious state, it was discovered, on attempting to give an enema, that there was no anal aperture. At its usual seat a cartilage-like substance, the size of a pea, could be felt; and at the entrance of the vagina, immediately below the hymen, which was complete, a pretty regular round opening, half an inch in diameter, was observed, surrounded by a firm, almost cartilaginous edge. The finger, passed through this into the rectum, caused fecal matter to flow out. Around the cartilaginous border, radiated folds of membrane were observed, resembling those surrounding the orifice of the urethra. The opening contracted slightly upon the finger, but could not be completely closed. The patient, on recovering her senses, was surprised to learn that she was the subject of an abnormal formation. She said she had only inclination for stool once or twice in a fortnight, the feces then passing either in a fluid state or in small hard pieces. She refused to submit to any attempt to remedy an inconvenience from which she suffered so little.

On examining the other case, occurring in a well-developed girl of 16, a completely flat surface, with neither depression nor elevation, was observed at the seat of the anus. About the middle of the perineum, and rather towards the right side, an aperture existed about the size of a pea, surrounded by almost cartilaginous edges, and capable of completely opening and shutting. Towards the interior it was lined by a circular fold of mucous membrane; and the completeness of the power of expansion and contraction which existed, left little doubt of the existence of a muscular apparatus.

Doepf states, in the "Transactions of the Petersburg Physicians," that among five cases of atresia ani in the adult, two occurred in girls. The hymen extended to a membrane closing the anus, and an aperture existed in the vagina. In both cases he sought, by an incision in the interval between the hymen and rectum, to enlarge the aperture of the artificial anus; but both cases died in

consequence of his interference.—*B. and F. Med.-Chirurg. Rev. July 1852*, from *Neue Zeitsch. für Gebürts. Band xxx.*

48. *Consequences of Congenital Phimosis.*—M. FLEURY terminates his paper upon this subject with the following conclusions: 1. Congenital phimosis possesses a pathogenetic importance that has been almost entirely overlooked.—2. This is exhibited in three orders of phenomena to which it gives rise. These are (a.) Accidents relating to the genital organs. The penis and testes are frequently small, and the mucous membrane of the glands delicate, red, and morbidly sensitive. Coition is painful and ejaculation incomplete, difficult, and often attended with severe perineal pain. Exhausting erections and nocturnal pollutions are of frequent occurrence, as are urethral discharges even after the purest connection. The genital sense is sometimes so excited as to give rise to almost continual erection, immoderate venereal desire, masturbation, and involuntary emission: while in other cases it is, so to say, extinct, a more or less complete anaphrodisia prevailing. (b.) Phenomena referable to the urinary organs. These are, frequent desire to pass urine, pain at the orifice of the urethra, and other symptoms, which are usually attributed to a vesical neuralgia, disease of the prostate, stone, or some other disease of these organs. (c.) Various disturbances of the nervous system, presenting a great analogy to those observed in women suffering from uterine disease, or displacement of the uterus, such as gastralgia, hypochondriasis, and hysteriform attacks—the true cause of which symptoms is always overlooked.—3. The excision of the prepuce is the only remedial means.—In 23 out of 27 cases in which this was resorted to, success was complete, the 4 others being lost sight of soon after the operation.—4. Whatever form of treatment may be had recourse to, these cases cannot be relieved until the vicious conformation has been remedied. After the operation, tonics, antispasmodics, and especially hydro-therapeutic means, are often of great service.—5. Ricord's operation, aided by the *serre-fines* of Vidal, constitutes the best surgical procedure.—*B. and F. Med.-Chirurg. Rev. July, 1852*, from *Bull. de l'Acad. tom. xvii.*

49. *Supposed Aneurism of Bone. Alleged death from Chloroform.*—M. PAMARD, of Avignon, lately submitted to the Academy of Medicine of Paris, an instructive case of supposed aneurism of the fibula, and death, alleged to be from chloroform, a week after the operation. The patient was a young soldier, twenty-seven years of age, who, while engaged in gymnastic exercises, felt a sudden pain in the leg, and was obliged to desist. A tumour, about the size of half an egg, was now noticed over the left fibula. Various means were used for some time to disperse the swelling, but to no purpose. The man was at last transferred to the hospital of Avignon, when the tumour had reached a very large size. It was elastic, seemingly surrounded by a thin, osseous shell, closely attached to the fibula, but unadherent to the tibia. There was no fluctuation, no *bruit de soufflet*, and no pulsation. M. Pamard had recourse to extirpation whilst the patient was under the influence of chloroform, administered with an oil-skin bag, in which were several little sponges, moistened with chloroform. As the patient was not affected by the drachm of chloroform which had been poured into the bag, another drachm was added, which sent him to sleep. The tumour was opened before it was finally removed, and found distended with a considerable quantity of clots, evidently of very old formation. M. Pamard then thought that the tumour was really an aneurism of bone.

The patient fell, during the operation, into a state of syncope, though there had been very little hemorrhage; ammonia was used, and as soon as the leg was dressed he was taken to bed, where warm flannel was placed upon the limbs and the præcordial region. No reaction ever took place, the pulse regained no force, and the man remained in a passively languid state for nine days, and died, in spite of a great variety of stimulants which were used to rouse the system.

On a *post-mortem* examination, the affected leg was found completely sphacelated, and the tissues infiltrated up to the thigh, but no attempt at healthy inflammation could be perceived. The tumour was springing from the fibula,

surrounded by a thin, osseous envelop; and where this was deficient it was replaced by a fibrous tissue resembling the periosteum. The interior of the tumour was filled by a considerable mass of solid clots. It was found impossible to trace the vascular connection between the cavity of the tumour and the bone. M. Pamard attributes the gangrene of the limb to the complete state of prostration into which the patient fell immediately after the operation, and thinks that the inhalations of chloroform had been mainly instrumental in that result.

Three surgeons of eminence, viz., M. Roux, M. Velpeau, and M. Cloquet, took part in the discussion to which this communication gave rise. M. Roux stated that deaths of this kind had taken place before the use of anæsthetic agents was introduced, and that he doubted very much that chloroform was to blame in this instance. He had, on the other hand, several years ago described this kind of aneurism of bone, and was of opinion that the ligature of the main artery of the limb might have been resorted to, instead of extirpation.

M. Velpeau thought the tumour was more of a cancerous than of an aneurismal nature; he had seen several such growths, and would class them among the fungus hæmatodes variety. As to the chloroform, he quite agreed with M. Roux.

M. Cloquet concurred with M. Velpeau as to the nature of the tumour, but thought the chloroform very probably was the cause of death.

It is plain that the tumour in question did not present any of the symptoms of aneurism of bone, as described by Scarpa; nor will the term fungus hæmatodes, as applied in this country, agree with the growth and appearance of the swelling. It would, with English surgeons, probably be ranked among encephaloid growths broken down by hemorrhage. As to the effects of chloroform, opinions will probably be divided; but as there was previous good health, and little hemorrhage, one might be inclined to look to the chloroform for the fatal results of the operation.—*Lancet*, August 14, 1852.

50. *A form of Sanguineous Tumour of the Cranium.* By MM. STROMEYER and DUFOUR.—Prof. HECKER described, in 1845, a hitherto unobserved affection, under the name of *varix circumscriptus vene diploicæ frontalis*, consisting in a sanguineous tumour of the cranium, having connection with the veins of the diploë, and through these with the sinus of the dura mater—an incomplete formation of the outer cranial wall being present. To this M. STROMEYER proposes to give the name of *sinus pericranii*, and furnishes notes of two examples he has met with. One of these occurred in a child six years old, who, four years since, fell from a considerable height, producing an indentation of the parietal bone. A swelling formed here, which, when full, projected to three lines. It filled on occasions, which caused congestion of the brain; but otherwise no fluid could be felt in the depressed part. A deficiency of the outer table existed. 2. A soldier, aged 20, had had from his birth a large swelling over his left eye, which, on occasions when the brain became congested, projected an inch above the level of the forehead. On emptying the swelling, a depression was felt in the os frontis, as if from a loss of substance. The blood re-entered the tumour half a minute after being pressed out. The condition of the skin was normal.—*Schmidt's Jahrb.* vol. lxx. p. 146.

A case recently related by M. DUFOUR seems to be of the same nature as the above; and is the more interesting from a *post-mortem* examination having been made. The subject of it was an old officer, who in 1799 had received, while mounting a breach, a blow on the forehead. In 1847, M. Hatin carefully examined his condition. As there had been no breach of surface, there was no cicatrix; but a very sensible depression of the frontal bone was present, supposed to be due to absorption of the diploë, and approximation of the other two tables. A tumour, covered with very thin skin, and of a livid colour, formed to the size of half an egg when he held his head downwards towards the ground, but disappeared again as soon as he altered his position. No pulsation existed in it, nor did the respiratory actions influence it, during the short period it could be examined—the position necessary for its production causing vertigo. The veteran enjoyed good health, could read without glasses, had a distinct articulation, and slept a good deal. He died of bronchitis (aged 81) in 1851;

and after death, inclining the head downwards failed to fill the tumour as it did during life. The brain was found to be healthy. At three centimetres distance from the falx on the right side, the two parietes of the arachnoid and the dura mater were adherent, as was this last to the skull. On detaching these adhesions, several red points, orifices of open vessels, were observed, and opposite to these, small openings in the table of the skull. Water dropped into this space soon filtered through, rendering the skin tumid; and by injecting fluids and passing bristles, the communication between these openings in the bone and the longitudinal sinus was proved to exist. The caliber of the sinus was somewhat enlarged, and it contained a coagulum. On dividing the scalp externally, slender fibrous prolongations were observed to extend from the fibromuscular layer to be united with the periosteum, at the edge of the depression, which was five centimetres broad and two and a half deep. It was lined by a very delicate periosteum, continuous with these filaments. The edges of the depression consisted of thickened, compact tissue, while the centre was composed of very thin, rarefied bone. The portion of the bone corresponding to the thinning of the external skin (about two centimetres in diameter) was destitute of diploë, and perforated with holes. No internal projection corresponded with the external depression.

Although all tumour was now absent, the mouths of the vessels corresponded with the apertures in the bone; and the affection might not improperly be termed an *osteo-vascular fistula*, or, according to M. Bouchut, a *fistula of the longitudinal sinus*. The pathological openings were, however, situated about an inch from the sinus, and the reductibility of the tumour during life is to be borne in mind. M. Dufour thinks the case can be best characterized as one of "sanguineous hernia of the cranial vault, by communication of the meningeal vessels with the external skin, through apertures in the bone." His personal inquiries and literary researches have failed to discover a similar case.—*Brit. and For. Med.-Chirurg. Rec.* July, 1852, from *Gaz. Med. de Paris*, 1851, No. 49.

MIDWIFERY.

51. *How to form a correct Estimate of the Dimensions of the Female Pelvis.*—G. VROLIK asserts that no writer on obstetrics, from J. L. Baudelocque to J. E. Rossirt, whose works he has referred to, proceeds upon a sure principle in estimating the dimensions of the female pelvis, and, in particular, of the inlet of the lesser pelvis. On the contrary, the oblique measurements should not be taken in a direction to which it is certain that the fetus cannot naturally be accommodated, nor should the transverse diameter be taken so far back or forwards as to bear no necessary relation to the head of the child. To exhibit that correspondence between the fetus and the aperture necessary for the passage of the former, all the lines of diameter should, according to Vrolik, be so drawn as to intersect each other in the central point of the brim of the lesser pelvis. This holds good no less of the transversely oval and obtusely heart-shaped pelvis, than of the round pelvis of the Javanese and of some European women. The direction of the oblique diameter, in order to correspond with the place which the head must occupy at the inlet, should not be from the sacro-iliae synchondrosis to the upper part of the pectineal eminence, or ischio-pubal synostosis of the opposite side, but to a point a few lines further forward on the horizontal ramus of the pubes, *i. e.*, excluding about three-fourths of the length of the ramus. (In his illustrations of the different forms of pelvis in different races, published in 1826, Vrolik has already pointed out this.) If a foetal head of average size be applied to the pelvic inlet with its long diameter in any other oblique direction, whether more forwards or backwards, resistance will immediately be experienced either against the promontory of the sacrum, or one of the superior rami of the pubes. What is true of the inlet continues true of the passage and outlet, for the centre of the inlet

is to be regarded as the axis of the lesser pelvis. Vrolik further points out, that the antero-posterior diameter of the outlet is by most authorities represented by a line touching the extremity of the coccyx while that bone is directed forwards; if the line be drawn to the coccyx directed backwards, its middle point will, as at the brim, be also the centre of the transverse diameter. Ritgen, who assumes four diameters drawn through the middle point of the inlet, cavity, and outlet of the lesser pelvis, has, in the determination of his measurements, proceeded upon an erroneous principle. The head in the successive positions which he believes to be necessary for natural labour, must, before leaving the mother's body, describe a half circle; but as the body, firmly embraced by the contracted uterus, cannot follow all these movements of the head, displacements of the cervical vertebræ or rupture of their ligaments would frequently ensue.—*Monthly Journ. Med. Sci.* Sept. 1852, from *Nederlandsch Lancet*, Feb. 1852.

52. *Pregnancy reputed Anormal, and terminating naturally.*—M. HUGUIER recently communicated the following instructive case to the Parisian Société de Chirurgie. A woman under his charge in hospital was believed to be the subject of extra-uterine, or, at least, of anormal pregnancy, for the following reasons: 1. The abdominal tumour rose very high. 2. There was a distinct depression between the tumour and the pubes. 3. The child was felt through the parietes of the belly. 4. The form of the tumour was quite peculiar. 5. There was no placental souffle. 6. The tumour, instead of occupying the median line and bulging forwards, occupied the whole right flank. 7. In the vaginal *cul-de-sac*, a tumour was felt, and believed to be part of the child. 8. Fecundation had been *la suite d'un acte violent*, and had been followed by circumstances which have been noted as often symptomatic of extra-uterine pregnancy. 9. Of the two physicians to whom the patient had first applied, one considered her to have organic disease of the liver, while the other inclined to the belief that she had a tumour of the right ovary.

M. Huguier noticed, in addition, a continual increase of the transverse diameter of the abdomen—persistence of tumour in epigastrium—and the peculiar carriage of the patient, who instead of throwing her body backwards, bent forwards while standing. Latterly, there had been febrile disturbance and intermitting lumbar pains, causing suspicion of peritoneal irritation. In addition, up to the last moment, no sign of approaching parturition: no uterine contraction, no dilatation of the cervix.

On the morning of the 30th of June, when M. Huguier saw the patient with M. Danyau, “the cervix was behind the pubes: it was conical and undilated. At this moment M. Danyau inclined so strongly to the idea of extra-uterine conception, that he pointed out the length and direction of the incision to be made.

“It was at three A. M. next day that labour commenced: the first pains manifested themselves on the 1st of July, in the morning; they were very frequent, recurring every five minutes; up to this time, no alteration of the cervix. Some persons who were present urged me to interfere; but not being sufficiently satisfied of the existence of the extra-uterine pregnancy, I refused, saying, that at two P. M. I should revisit the patient, and perform gastrotomy, after catheterizing the uterus. At fifteen minutes past two, MM. Danyau and Roux having arrived, I examined the patient with the finger. The cervix was not open, but I felt something give way, and recognized the head presenting. From this moment all doubts were removed: a simple labour was approaching; the head presented in the first position; nothing unusual occurred, and in two hours the woman was delivered.”

On the third day the milk fever was observed: for ten days the uterus remained high in the right flank, above the umbilicus, but finally resumed its normal position. Behind the uterus is felt a tumour of the size of an apple, which M. H. conceives may have been more voluminous during the pregnancy.

“I am inclined,” says M. Huguier, “to attach the more importance to this case, because it presented numerous points of difficulty of diagnosis, and because all my *confères* who saw the patient shared my doubts. It was,

therefore, an anormal pregnancy. If M. Paul Dubois did not admit the case to be one of extra-uterine pregnancy, he at first thought that the pelvis was presenting. As for M. Moreau, he likewise inclined to the idea of extra-uterine pregnancy."—*Month. Journ. Med. Sci.* Sept. 1852, from *Gazette des Hôpitaux*, 1852, No. 94.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

53. *Action of the Gastric Fluid on the Stomach.*—After stating the important ingredients of this, in the stomach (of a dog), viz., 1.95 of lactic and muriatic acids, in 1000 parts, the ferment, *i. e.* the organic matters held in solution in the water, which has been known by the name of *pepsin*, Dr. Dalton proceeds to derive: "The active principle, then, of the gastric fluid is an organic substance, similar in its mode of action to the ferment, and which it is necessary should be dissolved in an acidulated fluid. When these two essential ingredients, the organic principle and the acid, are both present, the gastric fluid has the property of dissolving the *albuminoid and gelatinary matters*, but all other alimentary substances, *amylaceous, fatty, and saccharine*, are entirely unaffected by it.

"Now comes an exceedingly interesting and puzzling question. How is it that this fluid, which dissolves muscular fibre, mucous membrane, cellular tissue, &c. &c., does not attack the walls of the stomach itself in which it is contained? How is it possible for a fluid, destructive of albuminoid substances, to be contained in an organ which is itself composed almost entirely of albuminoid tissues? This difficulty has usually been explained by referring to the vitality of the tissues of the stomach, by which they are rendered capable of resisting the chemical influence of the solvent; in the same manner as we know that the living body resists the extremes of heat and cold, while, after death, it immediately takes the temperature of the surrounding atmosphere. M. Bernard, however, explains the matter in a very different way. According to him, the gastric fluid resembles, in its mode of action, not only the ferments, but also a large class of poisonous substances, such as the venom of serpents, the vaccine virus, the Woorara poison, &c., which are exceedingly active when introduced into the circulation, but still may be taken into the stomach with impunity. It is now some years since M. Bernard undertook a series of experiments, for the purpose of ascertaining, if possible, the reason of this singular peculiarity, and the conclusion at which he arrived was that these poisons had no effect when taken into the stomach, simply because they *were not absorbed*. The fact had been previously explained by supposing that the gastric fluid acts upon the virus and destroys immediately its noxious properties; that the poison is in fact digested and chemically altered immediately upon entering the stomach. Bernard, however, shows most conclusively that this is not the case. Last week, he brought into the lecture-room a dog with a gastric fistula, and introducing a glass tube extracted a small quantity of gastric fluid, with which he inoculated a sparrow, by pricking it into a fresh wound in the thigh. This experiment was merely preliminary, and intended to show that the gastric fluid alone is not noxious. In effect, the sparrow appeared to suffer no inconvenience from the operation. Bernard then introduced into the stomach of the dog about ten grains of the Woorara poison (dried extract), and allowed it to remain. Between seven and eight minutes afterwards, another quantity of gastric fluid was taken from the dog's stomach, and a second sparrow, of the same size and appearance as the first, inoculated with it, and at the end of two minutes the bird was dead. Notwithstanding, the dog, as well as the first sparrow, remained perfectly unharmed.

It is proved, therefore, that these poisons are not destroyed by the gastric fluid, but are simply dissolved in it, and retain their activity, and that it is possible for an animal to have in its stomach, without suffering any harm, a poison, which, if introduced into the circulation, would be fatal in a few seconds.

Now for the reason why these substances are not absorbed, and consequently do not prove injurious. M. Bernard considers the stomach as defended from their action simply by the layer of mucus which covers the internal surface, in precisely the same manner as the skin is defended by its epidermis. The Woorara cannot penetrate the epidermis, and consequently is not absorbed when held in the hand. Neither can it penetrate the mucus of the stomach, and is, therefore, innocuous when swallowed. To exert a poisonous action, it must be introduced into the circulation.

According to Bernard, the gastric fluid, also, to exert its solvent power, must be *absorbable* by the substances with which it is placed in contact, and, like the Woorara, is prevented from attacking the walls of the stomach by the mucus which covers its surface. But there is still a greater difficulty remaining, viz., that as the gastric fluid is secreted by the mucous membrane of the stomach, it must necessarily be in contact with it when first produced. In order to reconcile this difficulty, we must recollect the manner in which Bernard considers the gastric fluid to be formed.

There are two essential ingredients in the gastric fluid, viz., the organic matter, the ferment called "pepsin," and the acid fluid in which it is dissolved. There are also two secretions in the stomach, viz., mucus, which is exuded from the surface of the mucous membrane, and the acid fluid, which is secreted by the gastric tubules or glandules. The layer of mucus is constantly being renewed, a fresh supply being continually exuded from the surface of the stomach, and gradually pushed farther and farther from it by that which is secreted afterward underneath. The secretion of the gastric tubules, when first produced, is simply acidulated fluid, incapable of digesting alimentary substances. It does not contain any of the organic matter. This organic matter does not exist until the acid fluid has traversed nearly the whole thickness of the layer of mucus, and is consequently separated from contact with the mucous membrane. *The active principle of the gastric fluid is, in fact, simply the gastric mucus which has become altered while moving from the surface of the stomach towards its cavity*, which has lost, in the mean time, its viscosity, and become soluble in the acid fluid. It is, then, very easy to understand how the gastric fluid may be said to be secreted by the mucous membrane of the stomach, and yet never have been in contact with it. So certain is it that the active digestive principle is only altered gastric mucus, that we may make an artificial digestive fluid by mixing the mucus of the stomach with acidulated water. After a few days, when the mucus begins to undergo a putrefactive change, it loses its viscosity, dissolves in the water, and the solution then exhibits all the digestive properties of a true gastric fluid. It may be considered, then, as almost demonstrated that the active principle of the gastric fluid and the altered mucus of the stomach are identical.

Such is the explanation of M. Bernard.—*Professor Dalton, in Buffalo Med. and Surgical Journal*, August, 1852.

54. *Strychnine in British Beer, Pale Ale, &c.*—Some time since, in a lecture delivered by M. Payen, at Paris, he is asserted to have stated that strychnine was prepared in large quantities in Paris, and that the French authorities had ascertained that it was destined for England, it being employed in the manufacture of the celebrated bitter beer of that country.

This statement was copied into the *Times* newspaper, and thus became universally disseminated. It was met with a decided and indignant denial on the part of the manufacturers. They invited and obtained the services of eminent analytic chemists (Professor Graham, of University College, and Professor Hoffman, of the Royal College of Chemistry), who deny unequivocally the presence of the poison in even the smallest possible quantity. Their observations, and the mode of analysis pursued, are worthy of attention.

Strychnine, the alleged (in this instance) substitute for the hop, is a fine crystallizable substance, extracted from *nux vomica*, and belongs to the class of vegetable alkaloids. Although a valuable medicine in minute doses, still, it is remarkable for its energy as a poison, and for the intense bitterness of its taste. Half a grain would poison a person, and the bitterness of the same

minute quantity is perceptible in every drop of six or eight gallons of water in which it is dissolved.

"It may be stated, at once, that the quantity of strychnine which we find necessary to impart to beer the degree of bitterness possessed by pale ales, is, for a gallon of beer, one grain of strychnine, or double the fatal dose. The price of strychnine is about 16s. the ounce, which does not amount to so much as one penny per grain. Estimating the annual production of pale ale in Burton at 200,000 barrels, the strychnine required as a bitter would, however, amount to 16,448 ounces, and cost £13,158, while nobody believes that so much as 1000 ounces of strychnine are annually manufactured over the whole world. The bitterness obtained by means of strychnine is equal in degree to that of the hop, but very different in kind, and easily distinguished when the two bitters are compared. The bitter of the hop is immediate in its action upon the palate, is accompanied by a fragrant aroma, and soon passes off; while that of strychnine is not so instantaneous; but when the impression is once communicated it is more lasting, and becomes, from its persistence, like that of a metallic salt. The bitter of strychnine is, indeed, easily distinguishable from that of the hop when deliberately tasted."

"Still, it would be highly desirable to be able to identify strychnine in beer by the actual extraction of the substance, and the application to it of a chemical test of absolute certainty. Fortunately, those poisons which have the most violent action upon the animal economy, possess often, also, the best marked reactions, or their physiological and chemical properties are equally salient. Thus arsenic and hydrocyanic acid are the most easily detected of chemical substances, and strychnine proves to be not far behind them in this respect.

"A quantity of strychnine, not exceeding one-thousandth part of a grain, is tested and recognized to be strychnine in the following manner: The powder is moistened with a single drop of undiluted sulphuric acid, and a small fragment of chromate of potass placed in the liquid. A beautiful and most intense violet tint immediately appears at the points of contact, and is speedily diffused over the whole liquid. Although most intense, the colour disappears entirely again in a few minutes. The admixture of the smallest quantity of organic matter, however, interferes with the success of the process. In order to apply the test in operating upon a complex liquor like beer, the strychnine must first be extracted from the liquid, and obtained in a pure, or nearly pure, state. This difficulty, which appears at first considerable, may be readily surmounted, and the strychnine, if it really exists in beer, be separated, and its nature established in the most certain manner."

"For this purpose, two ounces of ivory black, or animal charcoal, were shaken in half a gallon of beer, to which half a grain of strychnine had been purposely added. After standing over night, the liquid was found to be nearly deprived of all bitterness, the strychnine being absorbed by the charcoal. The liquid was now passed through a paper filter, upon which the charcoal containing the strychnine was collected and drained."

"The next step was to separate the charcoal from the strychnine. This was readily effected by boiling the mixture for half an hour in eight ounces of ordinary spirits of wine, avoiding loss of alcohol by evaporation. The spirits, which now contained the strychnine, were next filtered, and afterwards submitted to distillation. A watery fluid remained behind, holding the strychnine in solution, but not sufficiently pure for the test. The final purification was accomplished by adding a few drops of potass to the watery fluid, and then shaking it with an ounce of ether. A portion of the ethereal solution evaporated upon a watch-glass left a whitish solid matter of intense bitterness, and this was recognized to be strychnine, by giving the violet tint previously described, upon the application to it of sulphuric acid and chromate of potash."

Having thus satisfied themselves by repeated experiments on beer to which strychnine had been added, of the efficiency of the test, Drs. Graham and Hoffman proceeded to the analysis of a large number of samples of pale ale, taken indiscriminately from the supplies of some twenty manufacturers. *Not one of the varieties of beer, when tested with the greatest scrupulousness, gave the slightest evidence of the presence of strychnine.*—*Medical Times and Gazette*, May 8, 1852.

The Lancet (May 15, 1852) also contains a very satisfactory article on the chemical tests for detecting strychnine in beer, with the results of analysis, all agreeing with those already mentioned. We will only extract the following:—

“But we need not confine ourselves to chemistry in order to obtain evidence of the presence of strychnine in organic fluids, as physiology will disclose the fact almost equally well.”

“One gallon of beer, to which a grain of strychnine had been purposely added, was evaporated to an extract; this was boiled for nearly an hour in a mixture of ether and alcohol. The solution, after filtration, was evaporated, and the residue, of a soft consistence, was administered as a pill to a small rabbit. In the course of two minutes, the animal became affected with convulsive twitchings; these were almost immediately succeeded by a paroxysm of convulsions, in which the animal threw himself on his side, the head and neck being thrown back, the hind and fore legs extended and drawn backwards. The first paroxysm was rapidly followed by others, and in less than five minutes after the administration of the pill the rabbit was dead, it having exhibited the peculiar symptoms which characterize poisoning by strychnine.” T. R. B.

55. *Poisoning by Arseniate of Soda!*—Two young men, employed as clerks in a drug-store in Paris, and sleeping in the same chamber, were seized with severe pain in the bowels, which they attributed to a change of weather. They determined to take a purgative, and selected Saturday night for this purpose as the convenient time.

They sent to a chemist for doses of tartrate of soda, that having been prescribed for them. They took them at 11 o'clock at night, and then went to bed. In about five minutes they were attacked with violent cramps of the stomach. They were considered as the effects of the medicine, and the patients bore up under them. But, about five in the morning, their sufferings became so intense that they were obliged to cry out. On coming to their aid, the family found them so ill that physicians were sent for. But, in spite of every attention, one of them soon died, and the other remains in a very dangerous state.

The commissary of police, on being apprised of these circumstances, made the proper inquiry, and it was ascertained that the supposed purgative was a mixture of tartrate of soda and an arsenical salt, and, by a still more deplorable error, the poison had been placed in a bottle of tartrate of soda.

The Director of the School of Pharmacy has taken occasion, in consequence of these cases, to address a circular to all the *Pharmaciens* of Paris, renewing his cautions as to the sale of medicines, and stating the following:—

That several cases of poisoning have recently occurred in Paris, in consequence of a most fatal error, viz., the sale of *arseniate* of soda for *tartrate* of soda. That the druggists should each and every one take care to be assured of the purity of the tartrate of soda which they sell; and, finally, that they should carefully satisfy themselves of the purity of all chemicals purchased.—*Journal de Médecine et Chirurgie*, June, 1852. T. R. B.

56. *Should the Use of White Lead as a Paint be forbidden by Public Authority?*—This question is exciting considerable interest in France, one of the few countries in Europe where a due regard to the public health is part of the business of government. In England and this country we are too jealous of individual rights, too independent, if you please, to allow our rulers to watch over the well-being of the community.

We shall therefore merely present facts, without comment, as given to us in a memoir of Dr. H. DE CASTELNAU:—

“In his remarkable memoir on *Painting with White Zinc*, Dr. Bouchut advised the government, if it had due regard for the health of workmen, to forbid the use of white lead as a paint on all the public buildings, and that an example should be presented for imitation by the substitution of an article less deleterious. The favourable manner in which this proposition was received by the Academy of Medicine, at its session on the 4th of November, 1837, indicates their full accordance in the idea, although they were necessarily restrained from entering into the merits of the question of economics, and we derive a similar indica-

tion of opinion in the large premium bestowed by the Institute, in 1849, on M. Le Claire, for his essay on the means of rendering occupations less unhealthy.

All these circumstances have doubtless tended to aid in diffusing a report that government is about suppressing the manufacture of white lead. To aid such a measure, a few details on the point of sickness and mortality will be of use.

In accordance with a requisition from the prefect of police, the administration of hospitals demanded an annual return of all cases admitted into them of diseases from lead. It thus appears, that during ten years (1838 to 1847), 3142 were admitted, and that 112 of these died, being an annual mean of 314 sick and 11 dying. There can, however, be scarcely a doubt but that the first number is too low. There is very frequently a doubt as to the nature of the complaint on admission—indeed, lead affections take some time to develop themselves, and thus cases are frequently referred to other diseases. It is highly probable that at least 400 cases are annually admitted, and that fifteen deaths occur.

Of the gross number (3142), three-fifths (1898) were cases of workmen engaged in the manufacture of white or red lead, and the remaining two-fifths were persons employed in using these products, as painters, grinders, makers of porcelain cards (so called), &c.

Then again, there are many cases treated at their own dwellings, but unfortunately we have no data exactly to estimate their number. It is quite probable that they are at least equal to those treated in hospitals, and if this be conceded, we have annually 400 cases of lead disease in those who are strictly manufacturers of the preparations of lead, and of which 14 die. It would be too extravagant to carry this proportion throughout France. Reducing it nine-tenths, and with a due regard to the statistics of provincial hospitals, we are certainly safe in stating the total annual result at 2000 cases of disease and 80 deaths. These would be at an end with the suppression of the manufacture.

But there is another matter to be also considered. The average sojourn of a patient with saturnine disease in a hospital is 16 days. Add to this, the illness and loss of time that precedes, and the debility, broken health, and loss of business that follows so many of the workmen. Even if we do not estimate this last, still, the hospitals will be relieved annually of sixteen or seventeen thousand days of sick persons, not to take into account the permanent residence of many incurables.

Can there, then, be a doubt that the public health will be greatly improved by the suppression of these manufactories? Still, however powerful may be the arguments in favour, it would hardly answer to attempt their suppression, unless we could find a proper substitute, both in the healthiness of its manufacture, and its value in the arts. Can both of these objects be accomplished by the employment of the white oxide of zinc (*le blanc de zinc*)?

As to the first, Dr. Bouchut, just at the time of concluding his memoir, in July, 1851, received the following return from the company manufacturing zinc at Asnières. Up to the date named, they had employed 151 workmen, who together had performed labour during 31,585 days, and had been in the factory 36,156 days. In other words, the average was 209 labour days, and 344 days of residence for each person.

It is scarcely possible to present a more favourable bill of health. Who ever heard of a manufacturer of white lead remaining in its manufacture during 344 successive days? Besides, most of the above workmen still remain, and are able to count upwards of 1000 labour days.

Dr. Bouchut has carefully studied what should be called the *effects*, rather than the *diseases* caused by this species of manufacture. They are as follows:—

1. Pains in the throat and slight cough occur during the first days of labour, until the mucous membrane becomes accustomed to the exhalations from the white zinc. But they disappear very soon, and the workmen there are no more subject to cough or throat affections than the same given number of any other persons.

2. Many of the workmen are at various periods subject to a curious species

of innervation shown by febrile or non-febrile restlessness at night. But this does not affect the general health, and they return in the morning to their labour. Occasionally, there is a species of excitement, temporary, such as Delaroché and Barbier ascribe to the oxide of zinc, but with most it is the short feverish feeling just described. It is always of short duration, never dangerous, and disappears after the system has been accustomed to the employment.

3. Occasionally, eruptions appear on the skin, of reddish papulæ, which readily disappear with proper treatment.

Having thus noticed the effects, Dr. Bouchut proceeds to mention three cases of slight disease, ascribed to this cause. But a careful analysis proves that they were not owing to it.

Here, then, we have results which are frequently produced by emanations from the *most harmless substances*, when inhaled in the form of powder. The difficulty only extends thus far. But while white lead as powder causes its severe results also, we must recollect that it is equally noxious when manipulated in the humid form. From this, however, white zinc is totally free. It is only the powder of it that affects the workmen.

We should also remember the large doses that have for many years been administered of the white oxide as a medicine, without causing any accident. M. Orfila, the highest authority in toxicology, gave 20 grammes () to small and feeble dogs, with only the result of gentle vomiting, and a subsequent perfect recovery. How very different are the consequences of administering white lead.

As to the economic value of white zinc. It can be manufactured for exactly the same price as white lead, and being much lighter, a larger quantity can be sold for the same sum of money. It cannot be adulterated. This, indeed, has been made a formidable objection to it. White lead is very commonly mixed with sulphate of barytes, and not unfrequently with chalk. White zinc can be used with equal facility as a paint. It does not dry as readily as white lead, but the difference in time is small. It has been objected that it does not set well as a paint, but this is altogether a mistake. Two coats cover wood *very nearly* as well as white lead, and there is this further advantage, the vapours of sulphuretted hydrogen do not affect it, whilst all the preparations of lead turn black from them.

M. Leclair, an eminent house-painter, and others, have verified its use, on more than two thousand buildings, some of them public ones, to the satisfaction of the community.

The results, then, of suppressing the use of white lead by public authority will be—to save annually the lives of eighty workmen—to prevent 2000 cases of disease, some of them, indeed, incurable—and to enable active industry to continue its labours uninterrupted.—*Abridged from La Lancette Française (Gazette des Hôpitaux)* of June 8 and 15, 1852. T. R. B.

57. *Lead, Cider, Champagne.*—"Several very serious attacks of colic, with great prostration, have lately come under the cognizance of different practitioners of the French capital, the cause of which has been traced to the use of cider adulterated in the following manner. It has been found that unprincipled brewers used wine of very dark colour, coming from the south of France, to make cider, by first taking off the colouring matter with acetate of lead, and then causing the fluid to ferment by the addition of rotten apples. They then contrived to produce, by adding a great deal of water, a clear, pungent, frothy beverage, pleasant both to the eye and the taste, and which bore a striking resemblance to good cider. This compound had of late been in great request, and its ill effects are still noticed, the symptoms being principally vomiting, unconquerable constipation, colic, leaden hue of the skin, convulsive movements, impending paralysis, and the characteristic blue line of the gums. The government have, through the Committee of Hygiene, instituted the most searching inquiries on the subject."—*Atlas* (London newspaper), July 24, 1852. T. R. B.

58. *Chloride of Palladium, a delicate Test for Iodine.*—It is doubtful whether we shall ever succeed in obtaining a more delicate test than the well known

starch one, when properly used. M. LASSAIGNE, however, recommends another, as very minute. He affirms that a solution of iodide of potassium, containing not more than two millionths of its weight of this salt is rendered distinctly brown by the addition of the chloride of palladium.—*Annals of Pharmacy*, May, 1852. T. R. B.

59. *Ergot; easy Method of pulverizing and preserving it.*—M. VIEL recommends the following: Dry the ergot in an oven at a gentle heat, and then add double its weight of fine loaf sugar. The powdering of the ergot is thus accomplished in one-third of the usual time, and the sugar also possesses the power of preserving all the active properties of the ergot for many years, as M. Viel has been assured by several medical practitioners who had used it. It should be kept in small bottles, well stopped, to prevent its becoming moist.—*Annals of Pharmacy*, January, 1852. T. R. B.

60. *A new Organic Base from Ergotin.* By Dr. F. L. WINCKLER.—When ergotin, the watery extract of secale cornutum, is distilled with caustic potash, ammonia, and a volatile organic base, pass into the receiver. I have arrived at the conclusion that this alkaloid is identical with propylamin, which is the product from the decomposition of narcotine by potash, and is also a constituent of the pickle of herrings. Its odour is so peculiar, that I recognized it as being the same as that produced from the latter source.

Propylamin saturates acids completely, forming salts which are mostly (except the sulphate) soluble in alcohol. These salts smell strongly of fresh ergot. On the addition of tincture of iodine, the characteristic odour of propylamin immediately disappears, and the mixture smells of iodine. When the neutral aqueous solution of sulphate of propylamin is evaporated in a water bath, the unbearable odour of herrings is evolved; when the solution is sour, then it has the smell of ergot and all its reactions disappear. When this concentrated solution is distilled with caustic lime, without artificial heat being employed, pure propylamin passes into the receiver, which smells of ammonia and all the reactions of this alkaloid then reappear. In consequence of these properties of the propylamin, it has heretofore been regarded as ammonia; but I consider that it is the odorous principle of urine, sweat, and blood, and frequently the cause of the odour which nitrogenous substances emit when treated with alkaline solutions.

The propylamin is to be considered as a conjugate of ammonia. From my former researches, I am led to the conclusion that this alkaloid exists, combined with an acid in ergot of rye, as it is present in the pickle of herrings, but cannot be obtained by the action of potash, as is the case with narcotine. I have detected formic acid in ergot, which is probably combined with the propylamin. It is not very difficult to determine whether the peculiar action of ergot on the animal economy is due to the presence of this alkaloid, because the neutral salts are soluble in water, and may be readily administered. I have also reason to believe that propylamin is a constituent of cod-liver oil, because it combines readily with iodine, and moreover, the oil is a useful agent to administer it with.

Buchner, to whom Winckler has submitted specimens of propylamin and its salts, corroborates the above statement as to its properties, and alludes particularly to the powerful and enduring odour of herrings, which it communicates to everything. (Abridged).—*Annals of Pharmacy*, May 1852, from *Buchner's Repertorium*. T. R. B.

61. *Combinations of Arsenious Acid and Corrosive Sublimate with Albumen.*—On the 1st of January, 1852, appeared in London the first number of a monthly journal, entitled, *Annals of Pharmacy and Practical Chemistry*, edited by William Bastick and William Dickinson, members of the Pharmaceutical Society. We infer that it is intended in some degree as a rival to the *Pharmaceutical Journal and Transactions*. But be this as it may, the initial number contains an angry article on the subject above indicated, and notices *pro* and *con* are to be found in nearly all those which we have since received (to May

inclusive). The subject is of vast importance in its relation to the value of antidotes, and we shall therefore attempt a selection of authorities, and avoid, except where it is necessary to an understanding of the controversy, any detail of personalities.

Dr. Sheridan Muspratt, a pupil of Liebig, Professor of the College of Chemistry, Liverpool, in the January number, after speaking in the severest and most depreciating terms of Jno. B. Edwards (teacher of Practical Pharmacy in the Liverpool Chemists' Association), for having written the following: "If water so readily extracts arsenious acid, both from the compounds formed in the laboratory, and from those which nature has prepared, surely we may conclude that its retention is simply mechanical, and affords no ground for the theory which that eminent chemist Liebig has reared upon it," says:—

"In speaking recently with Liebig upon the above remarks, he replied almost as follows: 'There will always be men ready to carp at the sayings and doings of their superiors; but if I were to take up my valuable time in answering them, I should not have any time left to devote to other and more useful purposes. I know, and you do, from experiment, that *albumen does form insoluble compounds with arsenious acid and mercury*; consequently, any repetition on my part would be superfluous.'

In corroboration of the above, Dr. Muspratt quotes a number of authorities.

Baron Liebig's Chemistry of Physiology. (Extracts.) "Arsenious acid and mercury are the true inorganic poisons, the action of which depends upon their power of forming *permanent compounds*, with the substances of membranes and muscular fibres." "When solutions of these salts are treated with a sufficient quantity of albumen, milk, muscular fibre, and animal membrane, they *enter into combination* with those substances and lose their solubility." And again: "The action of arsenious acid and corrosive sublimate is very remarkable in this respect, *i. e.* they produce morbid phenomena by entering into combination with the organized parts of the body, therefore disturbing the functions of these parts and acting as poisons." Further: "Arsenious acid *enters into a very firm combination* with membranes and gelatinous tissues." "The arsenious acid, *combining with these tissues*, gives them the power of resisting decay or putrefaction." "It is further known that the parts of a body which come in contact with these substances during poisoning, and which therefore *enter into combination with them*, do not afterwards putrefy, so that there can be no doubt regarding the cause of their poisonous qualities." "If a vein be exposed and surrounded with a solution of arsenious acid, every blood globule *will combine with it.*"

And again: "The compounds of arsenic, which have not the property of entering into combination with the tissues of the organism, are without influence on life, even in large doses. Many insoluble basic salts of arsenious acid are known not to be poisonous. The substance called alkargen, discovered by Bunsen, has not the slightest injurious action upon the organism; yet it contains a very large quantity of arsenic, and approaches very closely in composition to organic compounds." "All substances administered as antidotes in cases of poisoning act by destroying the power which arsenious acid and corrosive sublimate possess of *entering into combination* with animal matters, and of thus acting as poisons. Unfortunately, no other body surpasses them in that power, and the compounds which they form can only be broken up by affinities so energetic that their action is as injurious as that of the above-named poisons themselves." "When the action of arsenious acid, or corrosive sublimate, is confined to the surface of an organ, those parts only are destroyed which enter into combination with it; an eschar is formed, which is gradually thrown off." Such, says Dr. Muspratt, are the few extracts from the great German physiologist's work on this subject.

Mr. Mercer, citing his results, says, he "took 100 grains of the albumen and one grain of arsenious acid and coagulated by heat. He boiled the coagulate in water, and could only get a small stain by Marsh's test; on decomposing the organic matter, the proof was abundant. He therefore thinks that combination had taken place."

Mr. Dawson: "I took the white of a perfectly fresh egg, and mixed it with a

large quantity of dissolved arsenious acid, and triturated well for some time, then coagulated the mixture by heat. My product was a snow-white substance, possessing an agreeable smell; when washed with cold water, it gave no indications of arsenic. The residue on the filter was dried, and its organic matter carefully destroyed by sulphuric acid; the black acid fluid, when submitted to Marsh's apparatus, gave *large, bright, black stains* of metallic arsenic, a proof of the compound mentioned by Liebig."

Professor Gregory: "He performed some experiments in Dublin in 1837, which satisfied him that Liebig was right."

Sir Robert Keene: "The compound of albumen with arsenious acids, and other acids, is *somewhat soluble*; with metallic oxides, insoluble."

Dr. Anderson: "There is, in my opinion, no doubt that the metallic poisons are capable of uniting with animal matters, and this I apprehend, is perfectly well known to all toxicologists, and is the universally received explanation of their antiseptic properties."

Dr. Muspratt: "I took 0.107 grm. of arsenious acid, and 12.67 grms. of the glairy albumen of eggs. They were intimately triturated together for about twenty minutes, coagulated by heat, and evaporated to dryness in a water bath. The white residue, affused with distilled water and filtered, yielded a filtrate, which gave *no deposit* of arsenic on copper by Reinsch's test, nor any stains on porcelain by Marsh's apparatus. When the residue on the filter was heated with pure sulphuric acid, and then submitted to the preceding experiments, arsenical indications were immediately obtained, proving that a combination of arsenious acid and albumen had occurred. The albuminous compound is sparingly soluble in boiling water, so that, when affused a considerable time, *i. e.* by using quarts or gallons of hot water, the whole of the albumen and arsenious acid might, with time and patience, be washed away."

Mr. W. Gaskell, of Manchester: "I took 26,807 grammes of albumen, triturated it in a mortar, then added 208 grms. of arsenious acid, previously dissolved in about four ounces of water, triturated, coagulated by heat, and evaporated to dryness. I next pulverized the brownish-yellow residue in a mortar, placed it on a filter, and edulcorated with forty times the bulk of water previously used to dissolve the arsenious acid. I could detect traces of albumen and arsenious acid in all my washings, but *never arsenious acid alone*. I tested the residue for arsenious acid, and detected a large quantity. Now, if no compound is formed, why was not the whole of the arsenious acid dissolved out by a quantity of water, ten times more than is required to effect its solution?"

Mr. Adam J. Harrie: "30.097 grms. of albumen were triturated for some time. I then added 0.307 grm. of arsenious acid, previously dissolved in about three ounces of water, triturated them together for half an hour, coagulated by heat, and evaporated to dryness at 212° F. The brownish residue was then pounded and washed with about forty times as much water as was used to dissolve the arsenious acid. I detected arsenious acid and albumen in all the washings. Arsenious acid was also detected in the residue by Marsh and Reinsch's tests, which evidently shows that a very firm combination of arsenious acid and albumen was formed, *frugally soluble in water*."

Mr. R. W. Forster, of Whitehaven: "I weighed out 36.24 grms. of albumen of eggs, and triturated them for some time in a mortar. I then dissolved .415 grm. of arsenious acid in about five ounces of hot water, allowed the solution to cool, and added it to the albumen in the mortar. The mixture was next triturated for twenty minutes, coagulated, and evaporated to dryness in the water bath. The dry residue was then reduced to powder, thrown on a filter, and washed with boiling water until no arsenious acid could be detected in the filtrate. In the whole of the washings (which amounted to nearly a gallon and a half), albumen was detected, and in the first portions, arsenious acid also in considerable quantities. When the washing was completed, the residue on the filter was boiled with pure sulphuric acid, and submitted to Marsh's test, but no arsenical indications were obtained."

M. Dumas, in treating of the combinations of albumen and metallic oxides, remarks: "These combinations are difficult of decomposition, and the metallic oxide *can only be entirely separated* by destroying the animal matter. The mer-

cure compound is soluble in several saline liquids; therefore, when white of eggs is used as the antidote to the poisonous effects of corrosive sublimate, chloride of sodium should be avoided, in order to prevent the solution of the compound in the secretions of the stomach."

Berzelius states: "Sulphate of albumen is almost formed when albuminous solutions are precipitated by an excess of sulphuric acid: *it may be decomposed* (evidently showing that combination has taken place) and the acid abstracted by carbonate of ammonia. Even after continued washing, sulphuric acid and albumen may be detected in the coagulum."

Thornton J. Herepath (in one of his experiments): "499 grains of the glairy albumen of eggs were taken and intimately mixed by long-continued trituration, with three grains of arsenious acid; the latter having been previously dissolved in a quantity of water sufficient to effect a perfect solution. The mixture was then coagulated by heat, and afterwards carefully evaporated to dryness on a water bath. The yellowish residue *thus obtained was reduced to a very fine powder in a mortar, and repeatedly digested for several hours together in boiling water, care being taken to reduce the compound to a still more minute state of division by patient trituration in a mortar, after each digestion, &c.*; the washings, on being tested by Reinsch's process, were found to contain a large portion of arsenious acid. The insoluble residue, having been digested in water, for about *twelve or fifteen hours, as before described, was dried and weighed. It amounted to about twenty-nine grains. It was then boiled with strong hydrochloric acid, when it dissolved with the characteristic colour of the protein compounds. Upon testing this solution in the usual manner, only exceedingly minute traces of arsenic could be detected.*"

All the above are quoted by Dr. Muspratt with approbation, except the last. The mortar and pestle, and hot-water operation, only go to show (as he says) that the compound has not been a *perfectly insoluble one*. Sulphate of lime is insoluble; so is glass; yet if either be reduced to powder in a mortar, and treated repeatedly with boiling water, traces of dissolved particles will be found.

In the February number, Mr. Edwards refuses to reply on personal grounds. Mr. Herepath, in his answer, states the following matters bearing on the point at issue. While Liebig and his followers assert that arsenious acid and albumen combine in atomic proportions, and thus form a true chemical compound—an arsenite of albumen—his opponents contend that the action is merely mechanical—that the small quantity of arsenious acid which is abstracted from the solution by the albumen, is enveloped, so to speak, by the latter substance, or condensed upon the surface of its molecules, just in the manner as the feculencies are abstracted from saccharine syrups, in the well-known process of clarification, or as iodine and certain alkaloids are separated from their solutions in animal charcoal.

Now, in the paper of Dr. Muspratt, according to experiments there described, every 100 grains by weight of the glairy albumen of eggs combine with 0.632 grs. of arsenious acid. But Mr. Herepath found that when 438.5 grs. of albumen were intimately mixed with 0.25 grs. of arsenious acid—that is to say, with only about the one-tenth of the quantity mentioned by Dr. Muspratt—and the mixture was coagulated by heat, evaporated to dryness, and exhausted with boiling water: the filtrate, even that portion which *first passed through the filter*, and before the mortar and pestle were used, was found to contain a large proportion of arsenic.

Again, in reply to Dr. Muspratt's examples of sulphate of lime, glass, &c., on being reduced to powder and dissolved, giving out some of their constituents, Mr. Herepath says, that glass, for instance, consists of several earthy and alkaline silicates, some soluble in water and others not, and the natural effects of long digestion in water are that small quantities of the former are dissolved out. But *solution is not decomposition*. "Now that the arsenite of albumen or albuminate of arsenious acid (if such a compound *does exist*) is decomposed by boiling water, I consider is clearly demonstrated by my experiments, and by those of one of his supporters, Mr. R. W. Forster, of Whitehaven."

The presence of minute traces of arsenic in the residuary matter is to be ex-

plained from the almost impossibility of removing the last traces of a foreign body even from a simple inorganic precipitate, and still more from an albuminous coagulum, where the contaminating ingredient is enveloped, so to speak, in an almost impenetrable covering.

Mr. Herepath concludes by stating that Dr. Muspratt has omitted to notice the fact, that a cat, to whom the arsenite of albumen had been given, died from its effects. According to the Doctor, the compound in question is not poisonous.

We come next, in the April number, to the rejoinder of Dr. Muspratt: "I contend (he says) that plate glass being slightly soluble in water, is quite an analogous case to the albumen compound. *Both are soluble in boiling water; neither are decomposed.*"

Mr. Herepath alludes to my not mentioning "the action of the so-called arsenite of albumen on the animal economy; I have repeatedly stated that it is not poisonous, to which statement I still adhere; and if Mr. Herepath will properly prepare the *compound*, he will also find it innocuous. If I am wrong, I am wrong in very eminent company. In conclusion, I have only to add, that white of eggs contains *free alkali*, which combines with the arsenious acid; consequently, if Mr. Herepath got a poisonous compound, it is the arsenite of soda, and not the arsenite of albumen."

Lastly, we have the reply of Mr. Herepath, in the May number:—

"The presence of free alkali in the albuminous portion of the egg is an established fact, and cannot therefore be disputed, but it still remains to be proved that any arsenite of potash or soda is formed, when arsenious acid is boiled with white of eggs. If such be the case, how is it possible to account for the absence of all traces of arsenic in the following experiment, described by Dr. Muspratt (*Quarterly Journal of the Chemical Society of London*, No. 14.) I took (he says) 0.107 grm. of dissolved arsenious acid, and 12.67 grms. of the glairy albumen of eggs. They were intimately triturated together for about twenty minutes, coagulated by heat, and evaporated to dryness in a water bath. The white residue, affused with distilled water and filtered, yielded a filtrate, which gave no *deposit* of arsenic on copper by Reinsch's test, nor any stains of porcelain by Marsh's apparatus.

"The most convincing argument I may draw (continues Mr. Herepath), that can be urged against the existence of a definite compound of arsenious acid and albumen is the non-formation of any precipitate upon mixing cold aqueous solutions of these two substances. For it is well known that tannic acid—a much weaker acid than the arsenious acid—immediately produces a dense precipitate of tannate of albumen, when added to albuminous solutions."

Here ends the discussion in the numbers received. Both of the belligerents promise to resume their investigations, and publish the results.

62. *Ferrate of Potash as an Antidote for Arsenic.*—CHATEL has found that one drachm of ferrate of potash precipitates, in an insoluble form, forty grains of arsenic, and that the hydrated peroxide of iron is much less effectual, as one ounce of it only precipitates five grains of arsenic; consequently, he recommends the above salt as an antidote. Whether the strong alkaline action of the ferrate will prevent its being so used, remains to be seen. It has not as yet been given in a case of poisoning.—*Annals of Pharmacy*, May, 1852.

T. R. B.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Extraordinary Precocity in the Development of the Male Sexual Organs and Muscular System in a Child Four Years Old. By ROBERT KING STONE, M. D., Professor of Physiological Anatomy in the National Medical College, and one of the Surgeons of the Washington Infirmary. (Read to the Pathological Society of the District of Columbia.)

I have the honour to present to the Society one of the most extraordinary cases of precocious development of the male sexual organs and general muscular system now on record.

Mr. Charles S——, of this District, brought his son, Theodore, to my house on the 14th of September, 1852, his birthday, for my inspection and opinion; stating that on that day he was four years old. I at once declared my incredulity, for his height and robust development seemed those of a child at least six years older than the age he mentioned. My astonishment was greatly increased, when, on stripping the boy, he offered to my view the well-developed sexual organs of a man, and the pubes covered with a luxuriant growth of hair.

I was perfectly incredulous that the boy was born on the 14th of September, 1848; but his father said he could produce his certificate of nativity, and that he, with his mother, the midwife who delivered him, and fifty other responsible persons, would swear that he had stated his age correctly.

The boy is remarkably handsome, and when stripped, presents a form of great beauty, which is, in fact, a miniature model of a perfectly developed athlete.

The condition of his muscular and osseous system is extraordinary; the deltoids and other muscles of the arm, forearm, back, and thorax, have the same relations to his height that those of a hard-labouring man would have of the stature of six feet. The muscles of the thigh, gluteal region, and leg, are perhaps better developed than those of the upper extremity, but in nearly the same ratio to the height.

If the child's face is concealed the examiner would declare his figure to be that of a miniature man, perfectly developed, and at least 21 years of age.

There seems to be little adipose tissue about him, the muscular prominences being clear, and well defined, as if produced by constant exercise or hard labour.

The growth of hair is distinct in the axilla, but by no means so marked as that upon the pubes. As in very robust men, the lumbar and sacral regions are covered with a thick down of dark hair.

His height is now four feet one-quarter inch, and weight nearly seventy pounds; though his mother informs me he weighed seventy-five pounds in the spring, and attributes his diminution to the great number of lumbricoides which infest him.

His penis is that of a well-developed man, measuring in a semi-flaccid state four and a quarter inches in length, and in the state of perfect flaccidity three and a half inches. The prepuce is short, leaving exposed a perfectly formed glans penis. I might state, also, that the papillæ of the corona glandis are in a state of hypertrophy, being distinctly salient, and exquisitely sensi-

tive. The pubes are covered with a luxuriant growth of crisp, curling, dark-brown hair, as found in the adult state. In the scrotum, presenting the appearance of the adult, are two firm, apparently well-developed testicles, perhaps rather under the average size of those organs in the adult. Independently of the penis, the development of these alone would have been decidedly remarkable at that tender age.

The spermatic cords are distinct, and under the finger give the impression of perfect organs.

Carefully examined from the neck down, the appearances are those of a *perfect man*, whilst the head and face were those of a child. On examining his mouth, it was found to contain only the twenty deciduous teeth of his age, with the exception of the middle incisors of the upper jaw, which were carious to the fangs.

The head was perfectly formed, and bears a proper proportion to the development of the body.

The breadth between the ears across the cerebellum was great; in fact, the anterior development of the cranium was less than the posterior; yet the relation could not be called bad at his early age.

The boy is lively, and seems intelligent, though his speech is imperfect, but he pronounced with facility after his father. He seemed unwilling to talk of his own accord before strangers; his father informs me, however, that he is very talkative at home and quite intelligent. His temper is good, and he is almost always in good-humour, but when excited by anger, his father alone can manage him, which he does by an old-fashioned, knock-down blow.

His father observed last night, when he slept with him for the first time, a constant erection of the penis, accompanied by a nickering, like an excited stallion, and for these reasons consulted me.

The boy has almost always slept by himself, and on a hard pallet on the floor. His back and shoulders are covered with the *acne simplex* of puberty. He has never been known to attempt masturbation, nor is it known whether he has had sexual relations, although the organ has that appearance. The slightest touch of the penis excites it, and the organ becomes tumid and of the average adult size, during the requisite examination.

The voice is that of puberty, and has been so for some time.

On the 15th of September, I visited him, accompanied by my friend and colleague, Professor John Frederick May, who verified the preceding examination and my measurements.

He is the seventh child and third son of his mother; weighed eleven and a half pounds at birth, and fifty-six pounds at three years.

At birth, the glans penis was perfectly uncovered, and the hair on the pubes half an inch long; at one year, things were just as they are now.

Around the thorax under axillæ, he measures 2 feet 1 $\frac{1}{2}$ inches.

“ hips “ “ 2 “ 2 $\frac{3}{4}$ “

“ thigh (middle) “ “ 1 “ 2 “

Penis in semi-flaccid state “ “ 4 $\frac{1}{4}$ “ long.

“ flaccid state “ “ 3 $\frac{3}{4}$ inches *full* in circumference.

Around the arm, below insertion of the deltoid muscle, he measures 8 inches.

Around the neck he measures 1 foot.

Around the head (above ears and over hair) he measures 1 foot 8 inches.

From meatus auditorius to meatus of opposite side across the occiput, he measures 9 $\frac{1}{2}$ inches.

Although his neck is full, there is no remarkable development of the laryngeal cartilages, Pomum Adami.

The next question is in regard to the power of the testicles to secrete. Since I first saw this man-boy, his father has made inquiry as to this fact, and states the following to me as the result:—

On the 13th of September, he slept with a near relative, a married lady, the mother of several children. In the middle of the night, she was aroused by finding the boy closely clasped to her back, and her night dress saturated. She thought he had emptied his bladder upon her, but on carrying her hand to the part, she found that it was saturated with a *very different and glutinous material* from that she expected.

I regret that I could not obtain the ejected matter to submit it to a microscopical test. The boy is extremely fond of embracing the opposite sex, though nothing further has been ascertained. In no other of the seven children borne by the same mother has the same condition been observed, and in comparing an elder sister of 10 years, I found she was extremely delicate, and only half an inch taller than Theodore.

I have several times seen him during an attack of nickerling, and am satisfied that it is produced by a tendency to epilepsy.

Since writing this account, I have been furnished by Dr. W. A. Williams with a certificate, stating that he has known the family of Charles S—— for the last seven years; that he knows Theodore was born in September, 1848; that he saw Theodore when a very young infant, in the arms of his mother, and knows, from having seen him almost every week since that time, that he is the same child who was presented to the Pathological Society of the District of Columbia, by Dr. R. K. Stone, on Friday, Sept. 17, 1852.

Further, Dr. Williams states that he has attended the family professionally for about eighteen months, and was a student of medicine at the time Theodore was born; and that he was first aware of his precocious sexual development in January 1852, from actual inspection, though he had been informed of it at an earlier date.

In terminating this simple statement, I may observe that the father presented extreme precocity, having experienced his first sexual indulgence at the age of 8 years. He informed us that between the ages of 10 and 13 years he was a *better man* than he has even been since. Delicacy forbids my detailing his prowess at that early age.

This extraordinary case will be perfectly under control for some time, and I will most willingly make any further observations which may be dictated by better heads.

It will be observed, that this is perhaps one of the most extraordinary cases on record, and I will now proceed to a hasty examination of a few of those to which reference has been made for me, in an exceedingly brief space of time, by my friend, Dr. R. D. Coolidge, U. S. A.

Precocious Puberty in Males.—1. An Account of a Child 3 Years Old. By GILBERT BRESCHET, M.D. *Philadelphia Journ. of the Med. and Phys. Sciences*, 1821, vol. iii. pp. 417–18. James A. Sarin, born 20 October, 1817; 3 years and one month old at report; weighs 50 pounds, 3 feet 6 $\frac{3}{4}$ inches high; penis when flaccid, 4 inches long, and 5 $\frac{1}{4}$ when erect. Testicles *not enlarged* in proportion to penis.

2. *Good's Study of Medicine*, p. 73. N. Y. edition of 1829. BOISSET, in the *Journal des Savans*, gives a case of a boy 3 years. *Philosophical Transactions*, 1745, boy 2 years 11 months. These were cases of great salacity, and no description given. Mr. DANKES, of St. Ives, near Huntingdon, reported the "Prodigium Willinghamense." The boy was buried at Willingham, and his

epitaph was, "Born October 31, 1741, died September 3, 1747. At one year had signs of manhood, not 3 years was nearly 4 feet high; stupendous voice, and he died of premature old age."

3. PLINY (*Hist. Nat. Lib.* 8, c. 17), reports a boy at Salamis 4 feet high, and attaining puberty at 3 years.

4. The case seen by CRATERUS, brother of Antigonus (*Phlegon, De Mirabilia*, c. 32), who was infant, youth, adult, father, old man, and corpse in 7 years.

5. *Milburger's Curiosities*, several cases.

6. Case reported by A. LOPEZ, M. D., of Mobile. *Amer. Journ. Med. Sciences*, vol. v. 1843, p. 500. Mulatto boy aged 3 years 10 months, and 15 days; weight 82 pounds; height 4 feet half inch; width around chest 27½ inches; belly 27 inches; thigh 19 inches; arm 9½; circumference of head 22 inches; length of penis at rest 4; circumference 3½; his scrotum has a fair proportion to the other developments; but the *testes* have not descended; has whiskers; axillæ hairy; teeth 20, and *deciduous*; lifts a man of 140 pounds; covered with *acne simplex* (as Theodore S—— is) of puberty. Has spermatic odour, but not known whether he has venereal appetite; judge from stains on his shirt.

To these, I could add from *Beck's Med. Jurisp.*, p. 519, vol. i. 1838, several cases in both sexes.

Very many cases of precocious development in the female might be adduced; but to them I do not care to draw your attention; it is only necessary to recall the fact that the mother of a family on the banks of the Ganges need only be 9 years of age.

There has been no time to investigate this subject fully, but I think it will be difficult to find a case comparable to the one which I now present you. In most of the cases to which reference has been made, there is something wanting; and when we examine the totality of the appearances, there is not one, except the case described by Craterus, which approaches the proportion of Theodore S——.

WASHINGTON, D. C., *Sept.* 1852.

Case of Secondary Hemorrhage of the Femoral Artery and Successful Ligation of External Iliac. By Drs. BOWIE and HASTINGS.—BROWN SMITH, Esq., was shot through the middle of the left thigh, in Stockton, with a pistol ball, on the 13th of April last. He lost a great deal of arterial blood, at the time, it was said, and once again when bleeding took place in bed. The limb was bandaged tightly at the time of the wound, and the bleeding ceased. Four days after, he was brought to San Francisco. In twenty-four hours after his arrival, a large pulsating tumour was perceived in the site of the inner wound, directly over the track of the femoral artery, the pulsations of which ceased upon pressure being made over the femoral just as it passes over the ramus of the pubis. It was determined to take up the femoral above the origin of the profunda, which operation was performed by Dr. Bowie on the 18th inst., assisted by Dr. Hastings. The patient went on well, and the wound looked healthy; the ligature came away on the ninth day, and no hemorrhage occurred, but an impulse was communicated to the wound by arterial pulsation. Five days after the ligature came from the femoral artery hemorrhage from this vessel took place, and notwithstanding there was a friend constantly by him who was prepared for the emergency, he bled until he was in a perfect bath of arterial blood, and the assistants were bespattered with blood from head to foot; Mr. Smith, almost pulseless, with countenance pale and anxious, complained of vertigo, and of being scarcely able to see. Firm pressure was applied to the femoral artery as it passed over the ramus of the pubis. In this state, Dr. Hastings was called in (Dr. Bowie having gone out of town), about 7 A.M., the 2d of May last. Assisted by Drs. Mills and Nott, Dr. Hastings cut down upon the external iliac artery

and ligated it about two inches below the bifurcation, brought the wound together by adhesive straps and applied cold water to the wound; kept the wounded limb surrounded by bottles of hot water, and supported the patient with brandy.

May 2, 12 o'clock. Has violent twitching of limbs when dozing or when waking from sleep; skin cold and clammy; left limb exceedingly cold; features pinched, countenance anxious, pulse fluttering; continued brandy and water alternated by a nutritious soup.

3d. 7 A. M. Complained of pain in the groin and lower part of abdomen, pulse fluttering; there is rather a free dark bloody discharge from bullet wounds in thigh; limb cold. *1 P. M.* Complains of pain about the umbilicus; great thirst. Treatment continued; allowed to chew ice. *8 P. M.* Passed urine freely of light colour; an enema of water brought away a small quantity of good fecal matter, all other conditions the same. Treatment continued.

4th. 7 A. M. Nervous startings increased; complains of more pain; left limb very cold, skin generally cold, pulse fluttering; dozes a good deal, has had profuse sweats during the night. Treatment continued. *1 P. M.* No change; wounds in groin and abdomen discharging pus; skin less cold; pulse fluttering, but can be counted at about 40 in the quarter minute; pain about umbilicus still continues. *1 A. M.* Still the same; a slight fecal discharge by water enema; urinates freely.

5th. 7 A. M. Pulse 30 to 35 in the quarter minute, but imparting a vibratory impulse to the touch; skin and left limb not so cold; perspiration less profuse, and nervous and muscular startings less violent; sleeps a great deal; complains of a strange sensation about the head, fears he is losing his mind; countenance anxious. Treatment continued. *1 P. M.* Wounds discharge pus freely; pulse becoming more steady, withdrew artificial heat from limb and reduced the stimulant. *8 P. M.* Pulse 25 to 30 in the quarter; skin more natural; left limb remains of good temperature; bullet wounds in thigh discharge less grumous matter, the others suppurate moderately and look well; feels comfortable, but complains of not being able to sleep; has no pain. *1 A. M.* Reapplied artificial heat to left limb during the night, has dozed comfortably.

6th. 7 A. M. Slept well during the night; had a good passage this morning by injection; skin more natural and moist; pulse 25 in quarter minute, soft and comparatively full; has some appetite, and expresses himself well; countenance tranquil; withdrew artificial heat and stimulants, increased diet by eggs and oysters. *1 P. M.* Wounds suppurating freely and looking well; symptoms all favourable.

7th. 8 A. M. Slept well; has a good appetite, and feels perfectly comfortable.

Put him upon full nutritious diet, and administered daily a water injection. From this time out he went on improving without an uncomfortable symptom; the ligature came away on the twenty-second day, and in a short time he entirely recovered.

On the Duration and Extent of the Protective Power of Vaccination. By O. C. GIBBS, M. D., of Perry, Lake County, Ohio.—The question concerning the duration and extent of the protective power of vaccination, has from time to time, since the days of the illustrious Jenner, engaged the serious attention of the medical profession. As yet, the anxious question remains unsettled. Dr. Gregory, of London, as well as others, have of late been trying to shake that confidence which the sanguine predictions of Jenner inspired. Among

the conflicting opinions, the public are anxious to know which is the right; are anxious to know what is the *extent and duration* of the protective power of vaccination.

Dr. Gregory asserts that the protecting power of vaccination is far less than of variolous inoculation; and also, that the comparative slight safety which it offers is but *temporary* in duration.

It would seem as though the combined experience of the medical profession might set this question forever at rest, if that experience was based upon unexceptionable observation. My experience, like that of every country practitioner, who has numbered but a few years of practical observation, is slight, yet such as it is, it bears directly upon the question under notice.

In the winter of 1850, I was called to see a boy who had never been vaccinated, and in whose case the variolous eruption was just making its appearance. There were six other members in the family, varying from two to forty years of age, all of whom had been vaccinated but the two youngest, whose ages were, respectively, two and four years. The parents had been vaccinated when young; I had been vaccinated when but eight years of age, and neither they nor I had been revaccinated, neither were we. On the following day, I vaccinated those who had not previously been, with vaccine matter which was several years old. The vaccine disease was produced in the oldest of the two, but not in the younger. On the third day from the first vaccination, I revaccinated the younger, and the vaccine disease failing to appear, on the third day from the last vaccination I performed variolous inoculation; but, fortunately, on the following day, the vaccine disease was manifested through the first vaccination, and it ran its regular course, rendering the variolous inoculation abortive. This child, the rest of the family, and myself, all escaped the disease. There was but one room in the house, and that confined and filthy.

The mother was four months pregnant, went her full time, and was delivered of a child presenting no marks of previous disease.

Since the above, I have attended one case in a family of five persons, all of whom had been vaccinated but the subject of the disease. The remainder of the family escaped the smallpox, though the parents had been vaccinated for at least thirty years, and had never been revaccinated.

Here are persons repeatedly exposed with impunity to the variolous contagion, who have had the vaccine disease thirty years before, and others, with equal impunity, who took the cowpox eight days after the smallpox exposure.

These facts, of course, are too limited from which to draw a safe conclusion; yet, they induce us to hope that an accumulation of closely scrutinized observations may lead us to a more favourable conclusion than that advanced by Dr. Gregory and his compeers in opinion.

PERRY, LAKE COUNTY, OHIO, *August 20, 1852.*

Cure of Consumption by Cod-liver Oil. By JESSE YOUNG, M. D., of Chester, Pennsylvania. (In a letter to the Editor.) In the January No. of this Journal, for 1849, the writer of this article reported a case of consumption cured with cod-liver oil. Since the report of the case, the subject thereof has passed through two severe attacks of epidemic catarrh, and with as little difficulty as did others who had never suffered from lung disease. She, however, in both attacks, on account of the persistence of the cough, resorted, for a week or two on each occasion, to the use of the oil, with entire relief. She has been cautioned, repeatedly, not to neglect catarrhal affections when attended with cough, however slight other symptoms might appear; partly on account of what she has passed through, but particularly on account of the *period of life*, at which she has fully arrived; several months have gone by since the

disappearance of the catamenia, and as yet she does not appear disturbed by the change. Her health is as good as ever it was; there is, however, she thinks, rather more tendency to cough from slight causes than formerly, but she has nothing like a fixed cough, nor anything else different from other persons who enjoy the most robust health. About two months ago, I auscultated her chest. I found in the left axilla, where the cavity had been, an indurated spot, perhaps one inch, or an inch and a half in diameter; around it, for something like two or three inches, rather loud (puerile) respiration. In no other part of the lungs was there discovered anything variant from natural sounds.

Medicine has rarely effected a more complete triumph over extreme disease than in this instance. This is the first case, so far as my knowledge goes, of the use of that article, in that form of disease, in this country. The apothecaries of the city knew nothing of the article; and when "white cod-liver oil" was inquired for, many of them said they had never heard of it, and knew not what it was. Since that time, however, it has become common enough, and there is reason to believe that there have been as many gallons of the oil sold, as there have been codfish caught. When unadulterated, its effects, in cases to which its use is at all adapted, are such, that it has gone on increasing in the estimation of the faculty, until it has become one of the standard articles, ranking not inferior to any of our other most valuable medicines.

Since 1849, the writer has used it extensively, not only in diseases of the lungs, but in different forms and stages of scrofulous affections, marasmus of children, the sequelæ of measles, pertussis, catarrhal and other forms of fever, where the strength of the patient was far exhausted, with loss of appetite, night-sweats, pain in the bones, and restless, uneasy nights, and where I should scarcely have known what else to recommend, and in no instance has it disappointed my expectations. In several cases of marasmus, in children from three months to four or five years of age, where iodine in every form, syrup of sarsaparilla, &c. &c., had failed entirely, the cod-liver oil has changed the state of affairs, and its use for two, three, or four weeks has restored the children to health, without the use of any other means. In coughs, and debility consequent on the effects of catarrh in old persons, no other article can compare with it. And yet it is not a *catholicon*; it certainly requires discrimination to derive the best effects from it, and to know the forms of disease to which it is applicable; and for want of this, some of our physicians ridicule it even now, because they have recommended it in some few instances, without judgment or discretion, and they have not seen any good come of it. If this rule of condemnation is to be applied to every article in which we are disappointed in its producing the expected results, where shall we find our remedies for any disease? Who has not been disappointed in the use of mercury, even in syphilis, without referring to hosts of other affections; and of iodine, in scrofulous tumours and ulcers; and even in the effects of cathartics, in their producing emesis, and the reverse? And yet we do not banish them because they disappoint us. Certainly, by means of this article alone, or as an adjunct to others, many cases of disease hitherto incurable can be cured entirely; and many others, where perfect cures cannot be effected, life may be prolonged for months or years, which could not be done without it. The writer is accustomed frequently to prescribe whatever other articles may seem indicated in the progress of a case exactly as though the oil were not in use. Lugol's solution, or hydriodate of potassa, or calomel, even to affecting the gums slightly, and keeping them tender for weeks; cough mixtures, of whatever kind were deemed best, all by turns have been used with the oil; or some-

times suspending it entirely for a time, when the indications for its use were not evident, then resuming it, *but not for the sake of using it*, but to meet some particular indication, exactly as any other article could be used. In this way, I have produced results entirely beyond anything I could have reasonably anticipated, in many cases, and which could not have been produced without the oil.

CHESTER, May 25, 1852.

Remedy for Intussusception of the Bowels. By A. S. BALDWIN, of Jacksonville, Florida. (Extract from a letter to the Editor.) Having recently seen in the medical periodicals, several reports of *post-mortem* examinations, in cases of intussusception of the bowels, I am induced to send you an account of a rather simple, but what appeared to me a very effectual remedy for this complaint, in a case which came under my care about four years ago, when I had despaired of affording relief by the ordinary remedies. If it shall seem to you to have sufficient merit, it may, perhaps, by giving it publicity in your journal, induce other members of the profession to give it a trial. During the last fifteen years, several cases of this complaint have come under my observation, most of which terminated fatally. The various remedies recommended were applied; among them the long elastic tube, for the purpose of throwing fluids high up into the bowels, with the hope of distending them so that the vaginated folds of the intestine might be drawn out. In some instances, at least, its use appeared to be productive of mischief, from passing through the constricted part of the intestines, so that the fluid injected was lodged in the pouch or sack existing above the point of obstruction; to ineffectually increase the distension already existing there; for, when the tube was withdrawn, no fluid was returned, and the distension was increased without having the effect to remove the difficulty. Injections administered by the common syringe were returned immediately, even while giving them, and had no effect to distend the lower bowel so as to aid in overcoming the obstruction, and the conclusion arrived at was, that adhesions existed between the folds of the invaginated parts of the bowel, and the obstruction was irremediable.

Circumstances which have occurred to me, dispose me to think that these adhesions do not take place so early, or so frequently, as many are disposed to believe. About three years ago, a case of this kind occurred in my practice, and for several days all the appliances which had been recommended had been used to overcome the obstruction, but without avail. There was a circumscribed spot, to the left of the umbilicus, and a little below it, which was painful; there was considerable distension of the abdomen, with a sensation of soreness across, but which did not amount to pain (being what is called in this country "*miser*"). Twice in this case the long tube was used, and injections thrown high up into the bowels, which, however, did not return upon the withdrawal of the tube, but added to the swelling previously existing above the point of obstruction. I was apprehensive that adhesion had by this time taken place, and as I despaired of relief by the ordinary methods, and the patient had arranged his temporal affairs and given himself up to die, I determined to distend the lower bowels, to their utmost capacity, by the injection of warm water.

An ivory tube, having a shield around it, was introduced and passed up until the shield was pressed up against the sphincter ani, a cloth was wrapped around this and pressed up firmly; the tube was now connected by an elastic tube with the pump, which was placed in a wash-basin of warm water, which was slowly injected into the bowels, pressure being kept up to prevent its return. Another

basin of water was brought, half of which was thrown up. The abdomen was, of course, much distended by this quantity of fluid, and considerable rumbling and commotion of the bowels were produced, the pain at the point of obstruction was, for a moment, acute, causing the patient to cry out. The pressure and tube were removed, and we found he had the power to retain the injection until he could be helped to the chair, when about five quarts of the injection was passed; becoming faint, he was laid upon the bed, and brandy and water administered; he soon rallied, and passed as much more, coloured by fecal matter; soon after, a copious and regular, but very offensive stool was had, in which the oil, taken several days before, could be distinguished. After this, he had no farther difficulty, except debility, and a sensation of soreness at the point of obstruction, which lasted for a few days, when he returned to his work, that of a carriage-maker, and up to the present time has had no return of the complaint. Since that time I have not had so severe a case of this complaint, but in every case which shows a disposition to be obstinate, I resort to this mode of injection, with uniform and immediate success. Perhaps some of these would have been as obstinate as the one above detailed, if the former mode of treatment had been pursued; but I am fully impressed with the belief that, had this remedy been used with those cases which had proved fatal, some of them, at least, might have been saved. The case in which I first tried it was an unpromising one, on account of the long time which had elapsed since the attack before the remedy was used, sufficient for adhesive inflammation to have agglutinated together the folds of intestine involved in the intussusception.

JACKSONVILLE, KENTUCKY, June 3, 1852.

Obstruction of the Rectum by the Impaction of a number of Plum-stones which had been swallowed.—By R. HAZLEHURST, M. D., of Brunswick.—A strong, able-bodied negro, aged about 25, working on a canal near this place, took it into his head to eat very freely of plums, stones and all, as he says (and probably truly), without eating anything else during the day, and at two different times. Not apprehending much of consequence, a dose of castor-oil was directed, and this not having proved effectual in removing the symptoms, I had recourse to artificial means, the introduction of the forefinger with the intention of scooping them down with it. In this I might have succeeded, if I had not been prevented by the soreness of the rectum, and the inability of the patient to bear the least pressure, on the plum-stones now come down. By the continued straining and ineffectual attempts at defecation, they were completely impacted in the rectum, in the same manner that buckshot, well-chambered in a smooth-bore gun, cannot be removed by inverting or shaking the barrel. I got out four or five by several enemas of cold water, and six or seven with the finger. But the latter proceeding was so painful to the patient that he ran off into the woods. I left directions for him to take a dose of oil the next day, which brought away some more, but purged him excessively; and on the third day, when I saw him, he was much reduced, and in a state of desperation and great suffering. I examined the rectum, and found it in *statu quo*, completely plugged up with the plum-stones, only allowing liquid feces to pass through their interstices. After having tried an injection of warm water and oil without effect, I introduced my finger with the intention of removing them one by one; but as soon as I touched one with the finger he jerked away, said he was going to put on a clean shirt, and ran off again. An attempt was made to bring him back; but he appeared maddened by his sufferings, and it was found impossible to get hold of him. The next day, the fourth from his first complaining, it was feared, from his non-appearance, that

he had been drowned by the tide flowing up and covering the salt marsh where he was last seen, and on which it was probable that he had laid himself down. Search was made for him for several hours, and he was at last found lying on the ground, so much reduced from hunger and suffering that he was unable to move, and had to be carried home. There was now no time to lose. I put a previous threat into execution, had him tied, introduced my finger, and sliding a pair of forceps, rounded and grooved at the extremities, alongside, was steadily employed, for the space of three hours, in removing the plum-stones one by one, until no less than one hundred and thirty were counted, besides some forty that he passed afterwards, and more before, which last were not counted, but must have made them altogether amount to two hundred and eighty plum-stones. I do not know what measure of plums these would make, but I suppose about a peck. The extraction of each stone occasioned exquisite pain, and the patient requested rest after every two or three were removed. Most of them were covered with blood, and would doubtless soon have brought on ulceration in the gut. Dysenteric symptoms, as might be supposed, have ensued, which ceased with the removal of the cause and appropriate treatment.

P.S. The patient is almost well, and by measurement it is found that he must have eaten almost ten quarts of plums, say a peck, at a moderate calculation.

BRUNSWICK, June 20, 1852.

Tumour connected with the Spleen mistaken for Ovarian. Incision in Linea Alba below Umbilicus. Adhesion. Introduction of Tent unsuccessful. By DAVID PRINCE, M. D., of St. Louis, Mo. (Read before the St. Louis Medical Society.) Visited (July 10, 1850) Mrs. Simpson, of Calhoun County, Illinois, aged about 40. Married, but childless; menstruation never has been materially deranged; has felt a tumour in her left side for four years. At first, she said, it was small, and confined to the left iliac region; but as it grew larger it became movable to the other side, and rose higher. Difficulty in retaining the urine followed, and at this date there is great impairment of health.

The tumour was somewhat painful over its lower part and left side, but not elsewhere. It moved freely from side to side, and while the patient was lying upon her back, the tumour was easily made to pass into the umbilical region, and even into the epigastrium. Its favourite position was the left side, extending from behind the false ribs to the iliac fossa. An apparent fluctuation existed in the lower portion of the tumour, but no semblance of this could be detected in the upper. No uterine sound was employed as a means of testing the question of the connection of the tumour with the uterus.

Diagnosis.—An ovarian tumour, probably solid, in whole or in part.

Indication.—An exploratory incision to remove the tumour, if ovarian and free; to leave it untouched, if extensively adherent; and if the adhesion should be at the point of the incision, saving the peritoneal cavity from being perforated, to introduce a tent, and leave the tumour to waste itself in suppuration.

Operation.—An incision two inches in length was made in the linea alba, midway between the umbilicus and the pubes. The omentum came into view adherent upon its anterior surface to the abdominal parietes, and loosely upon its posterior aspect to the anterior surface of the tumour. So extremely loose was this adhesion that the tumour seemed ready to roll away from the incision, yet without discovering any communication between the incision and the peritoneal cavity. The tumour, however, was readily retained in its place by pressure above and around. A trochar introduced into the tumour brought

nothing away, a few drops of blood only issuing through the canula. The canula was made to pierce the tumour in various directions, breaking down its substance with a crackling sound, and still only very little blood flowed. The substance of the tumour was cut into and torn by the finger, and still but little blood came.

A tent was then introduced into the wound, two stitches employed to unite the lips at their extremities; a compress was laid on, and secured by a bandage.

Chloroform was employed, but was slow and imperfect in its effect, about an ounce and a half having been poured upon the sponge through which the patient inspired. Only an unquiet stupor was produced, from which she awoke with an imperfect memory of what had taken place.

Prognosis.—It was hoped that inflammation and suppuration might secure the complete destruction of the tumour, as was the case with Mrs. Cooper, whose case was reported in this Journal, July, 1850, page 267.

Result.—The case was left under the care of Dr. Whiting, of Rockport, Illinois, who subsequently reported that no untoward symptom occurred for four days, the patient being cheerful, and even sanguine of recovery. Upon the fifth day, sudden prostration occurred, the pulse became fluttering, the respiration difficult, and death resulted.

Autopsy.—There was a large tumour, loosely adherent upon its anterior surface to the abdominal parietes, and connected by a narrow pedicle to the spleen. The uterus and its appendages presented their usual appearance. There was no inflammation of the peritoneum, or effusion therein. Dr. W. could not tell what was the immediate cause of death, but has no doubt the patient died somewhat sooner for the means resorted to to prolong her life. As she had chosen the operation, however, with a full knowledge of the risk incurred, preferring a speedy death to a longer protraction of her sufferings, with no hope but from this means, the result was one she had calmly contemplated; the wishes of the patient were realized—a death “speedy and easy, if it must come.”

No opportunity was, in this case, afforded the medical adviser to examine the tumour in the progress of its growth. Had there been, the growth would probably have been found to be from above downwards, instead of being from below upwards, as with an ovarian or uterine tumour. The account of the patient was probably incorrect. As the tumour seemed to be solid, no tapping was, of course, resorted to; had this been done, the case would have been one of “dry tapping.”

Had the diagnosis in this case been correct, no operation would have been attempted.

Case of Abstinence for three months, no Food, during that period, being taken into the Stomach. By J. L. PIERCE, M. D., of Fallsington, Bucks County, Pennsylvania.—On the 13th of January, 1836, my friend, Dr. May, was about leaving Philadelphia for the East, and requested me to take charge of a number of cases of considerable interest, which he then had under his care. Among these was a lady who had for many months been severely affected with disease of the stomach. As the exact character of the disease may admit of dispute, and as it is not this to which I wish to draw attention, but a peculiarity in the mode of treating it, I have headed the article in the manner it stands.

I called with Dr. May to see this patient on the 13th of January, 1836. She was about twenty-six years of age, sallow complexion, emaciated, pulse 120, feeble, but regular. A spot over the left epigastric region, of an inch

and a half in diameter, was very tender on pressure, and considerable tenderness existed for some distance around it. Her appetite, though not craving, was sufficiently good to enable her to eat almost any food, though she had been restricted to a very simple diet. Her bowels were open every two or three days, passages natural. She was in the habit of vomiting several times a day, and her food was generally rejected within a few minutes after it was taken. She had been sick about three months, and had been confined to the bed a large portion of this time.

I was informed that her case had been considered as carcinoma of the stomach. Her treatment had consisted of such articles as were calculated to allay the irritability of the stomach and the vomiting, and to quiet the severe pains of the epigastric region. A constant sore had been kept up over the affected spot by means of blisters, which were dressed with anodyne ointments, and occasionally leeches were applied to the spot.

On taking charge of the case I watched it for some days very closely. I found that neither food nor medicine appeared to remain upon the stomach, but that as often as either was administered, vomiting ensued; and with the food ejected, there was from a teaspoonful to a tablespoonful of matter, such as is usually discharged from an abscess. Should nothing be taken into the stomach for some hours, emesis would take place of this kind of substance by itself. During the first week, I pursued the same mode of treatment as had been made use of formerly, but I soon became satisfied that it was altogether useless, and that the patient must sink unless some more effectual plan were adopted. The simplest medicine taken into the stomach was rejected as soon as the severer kind, and even gum Arabic water or barley water was as irritating as oysters or roast beef could have been.

Towards the close of January, I asked her if she was willing to submit for one month to an entire abstinence of all kinds of food by the mouth, and be nourished solely by enemata. The idea was a novel one to myself, but my view was that the stomach must rest, and let the character of the disease be what it might, it would thereby stand a much better chance of healing. That there was a suppurating sore in the stomach appeared evident, and rest was absolutely essential. She was now exceedingly emaciated, and so feeble that she was entirely confined to the recumbent posture.

On the 1st day of February we entered upon our new mode of treatment. I directed lamb or mutton broth of good quality to be kept constantly on hand, and a half a pint to be used as an enema every three hours. During the first week, I allowed her to take not exceeding a teaspoonful at a time of gum Arabic water or pure water, several times a day, with the request that she would lessen the frequency of it towards the latter part of the week, so as to be able to refrain from it entirely on the commencement of the second week. She very readily acceded to my wishes in every respect, and I have not the least doubt of her acting with perfect honesty towards me. I kept up a running sore over the epigastric region, which I dressed with simple cerate or basilicon ointment, sprinkled with morphia.

During the first week my patient vomited from three to six times daily, discharging pus, and a considerable quantity of matter resembling tubercles. Her sensation of hunger was at times great, but she bore it with remarkable fortitude. At the expiration of the week she was evidently more comfortable, and became increasingly so during each succeeding week of the month, at the close of which her condition was as follows: vomiting occurs on an average about twice a day; substance discharged the same as before, tinged with a little blood; tongue clean, pulse fuller than formerly, and less frequent; countenance more healthy. I now asked her if she were willing to

continue the same treatment for another month. She did not hesitate in giving a prompt response; and, during this month, not a drop or morsel of anything passed her lips.

April 1. Condition in every way improved. The vomiting occurs once in two or three days, quantity less, appearance of discharge white, with but very few of those particles resembling tubercles; bowels regular; pulse 90; very little pain; strength improving.

I now requested her to continue the treatment one month longer. She consented to do so, and it was astonishing how rapidly the improvement progressed. By the middle of the month I consider the cure to have been nearly completed, but thought it best not to depart from the course we had been pursuing, lest irritation of the stomach should renew the vomiting, and other unpleasant symptoms. About the 24th of the month, I allowed her a tea-spoonful of gum Arabic water three or four times a day, with directions to increase it in frequency each successive day, so that the stomach might be gradually prepared for its usual nourishment. By the close of the month I felt satisfied that the disease of the stomach had ceased, that the sore had healed, and that my patient, by a forbearance and perseverance seldom equalled, had been rescued from an untimely grave. She was now able to sit up a considerable portion of the day, a part of the time attended to some needle-work or knitting; could walk some distance without assistance; complexion good; pulse 80; bowels regular, and much fleshier than when I commenced my attendance upon her.

I continued calling on the patient occasionally until the 18th of May, when I took my leave of her, with many blessings showered upon my head.

In consequence of her removal to Southwark, I lost sight of this patient for nearly two years, when I accidentally met her in the street. Her appearance had so much improved that I scarcely recognized her; and she assured me that she was in the enjoyment of uninterrupted health.

Case of Narcotism. By T. M. WOODSON, M. D., of Sumner Co., Tenn.—In the number of the *American Journal* for April last is published an interesting case of poisoning with opium, by Dr. Young. I find recorded in my note case-book the following similar case, which I place at your disposal for publication, if you think proper:—

I was called, on the 18th August, 1850, 9 o'clock A. M., to see an infant five days old. Its mother became alarmed on being unable to arouse it, or induce it to suck. She had given it, during the latter part of the night, as she supposed, a dose of paregoric; does not know how much. It soon fell asleep, as she supposed, and nothing wrong was suspected until a few minutes before I saw it.

Countenance pallid; pulse feeble, thread-like, and scarcely perceptible; respiration slow, interrupted, attended with occasional moaning; skin cool and clammy; extremities cold; eyes half open, drawn forcibly upwards and outwards, pupils contracted, did not dilate when light was removed; slight spasmodic contraction of muscles, of face and extremities. Gave it a few drops of brandy, and applied cold water to its head, to be continued until it was aroused. I visited again next morning, and to my utter astonishment found it relieved. It began to recover late in the evening, but the cold water was not discontinued until late at night, when it sucked freely.

On examining the vial from which the medicine had been given, I found it to be Bateman's drops, used to the dregs, which is stated by Wood and

Bache to contain about the same amount of opium as the camp. tinct. opii. This should be a warning to mothers against the use of nostrums.

This case proves clearly the efficacy of cold affusion, in excessive narcotism, being the only remedy that could be used at the time, as it was too late for emetics, the poison having lain in the stomach eight or nine hours, and the child was too young for the ordinary remedies used in such cases. I therefore repose the utmost confidence in cold water, as being the safest and surest means adapted to all stages and cases.

HANNA'S P.O., SUMNER CO., TENNESSEE, April 28, 1852.

Case of Rupture of the Uterus. By J. L. PEIRCE, M. D., of Fallsington, Bucks County, Pennsylvania.—On the 10th of December, 1835, when I resided in Philadelphia, I was called at one o'clock A. M. to a coloured woman, in labour with her second child. The membranes had ruptured at three o'clock the previous afternoon, and when I entered the room I found the pains were very strong, but not of the character we term "bearing down." The os uteri was dilated to the size of a half dollar piece, and I ascertained that it was a vertex presentation, and that the antero-posterior diameter of the pelvis was very much contracted. After waiting two hours, the head having advanced but little, I endeavoured to take a nap. In about an hour the groans of the patient had ceased, and on going to her I was alarmed at the altered condition of things. She was cold as death; in a profuse perspiration; the abdomen was exceedingly tender; the pulse imperceptible; and she was shaking violently. Upon making an examination per vaginam, I found that the head had receded so that it could not be touched, and there was an entire absence of pains. Thinking to bring on a gradual return of them, I administered five grains of ergot every fifteen minutes for one hour, but without effect. In this state of the case, I sent for my friend, Dr. J. K. Knorr, to confer with. On his arrival, no favourable change having taken place, we concluded to consult Dr. Janney, who immediately suggested the probability that a rupture of the uterus had taken place. On examination, Dr. J. found that this suggestion was correct, and that the child had passed into the cavity of the abdomen. He brought down the feet, and with great difficulty the body was delivered; but every effort to bring down the head by instruments, or otherwise, proved unavailing, until at length it was severed from the body. After a long time spent in fruitless endeavours, as a last resort the brain was evacuated, and then by means of the guarded crochet and blunt-hook, the head was extracted. The patient bore the operation with the greatest fortitude—scarcely a complaint escaped her lips. Of course, she was exhausted. We had her placed in a comfortable position, and kept as quiet as possible. Some brandy was given immediately, and ten grains of carb. ammonia with twenty-five drops of acetated tinct. of opium were administered every half hour. The cold and pulseless state continued through the day and most of the night. On the following morning, a slight degree of warmth was restored to the body, and by noon, to the elbows; but the pulse was still imperceptible. The abdomen was exceedingly distended with flatus. Frictions with ol. terebinth. and with tinct. capsici were used from the time of her delivery. Stimulants and opiates were used as freely as was deemed prudent. At 3 o'clock P. M. her breathing became laboured, and at about 7 o'clock in the evening she was released from her sufferings, thirty-four hours after delivery had been effected.

On the succeeding day, a *post-mortem* examination was made. The uterus was found severed from the vagina on its anterior portion, and the os uteri

was torn on each side to the extent of several inches. The uterus was scarcely at all contracted. The antero-posterior diameter of the superior strait measured three inches; but the circumstance to which the rupture was to be attributed was the existence of a spinous process upon the superior posterior portion of the symphysis pubis, of about three-quarters of an inch in length, terminating in a sharp point. The constant and severe pressure of the fœtus for so long a period upon this process no doubt caused the vagina and uterus to give way.

DOMESTIC SUMMARY.

Chemical Examination of the Mineral Water of Cooper's Well, near Raymond, Mississippi.—Dr. J. L. SMITH, Professor of Chemistry in the University of Louisiana, has published (*Western Journ. Med. and Surg.*, July, 1852) the following analysis of the water of Cooper's well, which enjoys a local celebrity for its efficacy in chronic diseases of the bowels.

"The water analyzed was collected in the month of December, 1851, and part of the examination was made at the source.

The water is derived from a well dug to the depth of one hundred and seven feet in a porous sand rock, which is covered in some places with a coarse conglomerate of pebbles, consolidated by oxide of iron. The depth of the water in the well seldom exceeds five feet; it is said to flow in at the bottom from three different sources, and it will be well to examine their general characters separately, so soon as the water from them can be obtained. It flows most abundantly in winter, and therefore the summer water might be expected to contain more mineral matter. The country around is broken, remarkably dry, enjoying a reputation for general salubrity, and its convenient proximity to the Vicksburg and Jackson Railroad is calculated to make it the first watering-place in the Southwestern country, either as a resort for invalids or pleasure-seekers.

Chemical Examination of Cooper's Well Water.—Temperature, 64° Fahr., the air being at 53° Fahr.

Taste—not unpleasant; slightly mineral.

Odour—little or no odour, although at times it is said to have distinctly that of sulphuretted hydrogen.

Colour—transparent, with small yellow flakes floating in it.

Specific gravity	100,147
Gas contained in one gallon,	
Composed of oxygen	20
" nitrogen	68
" carbonic acid	trace
" sulphuretted hydrogen	trace

Substances contained in one gallon are:—

Sulphate of soda	11.705 grains.
" magnesia	23.280 "
" lime	42.122 "
" potash . . . . .	.608 "
" alumina	6.100 "
Chloride of sodium	4.260 "
" calcium	4.025 "
" magnesium	3.480 "
Silica	1.801 "
Peroxide of iron	3.362 "
Crenate of lime . . . . .	.311 "

The deposit which collects from concentrating the water, or after it has stood for a time, contains in 100 grains:

Crenate of lime	2
Peroxide of iron	35
Sulphate of lime	25
Water	38

The iron was found altogether in the yellow particles which float about the water, although it is more than probable that at certain seasons of the year it must be found in the clear water also.

The water when kept loses none of its properties, as has been proved by strict analysis; and at all times, when the effects of the iron are sought for, the sediments should be drunk along with the clear water.

The concentrated water appears to lose nothing but a portion of its sulphate of lime. So in that form, when diluted with pure water, similar medical effects might be expected to those produced at the spring; but, of course, like all other mineral waters, it is only at the source that the patient can expect most advantage; and it is equally true that precautions are to be observed in the use of Cooper's well water.

The diseases to which the water appears mostly adapted are chronic intestinal diseases, which embrace a class too numerous to be mentioned in this report. It has also been found eminently useful in dropsical affections, as well as in inflammation of the bladder. In the short space of twelve or fifteen years, it is impossible to discover all the diseases to which a water of this description is adapted, as chemical analysis alone cannot guide us in making its application. The remarkable virtues of this water, in the character of diseases before alluded to, are known and acknowledged by several of the most eminent physicians of New Orleans, Mississippi, and Alabama."

Early Operation for Harelip.—Dr. A. L. PIERSON, of Salem, in common with the best surgeons of the day, advocates the early performance of the operation for harelip, and in a late number of the *Boston Medical and Surgical Journal* (Sept. 15), furnishes some observations in favour of that practice.

"On the 2d of February, 1851," he says, "I was called to operate on a child in Marblehead, born with a harelip. The late Dr. Briggs, who knew my preference in favor of an early operation, sent for me immediately on the birth of the child. I performed the operation when the child was but twelve hours old. I operated in the usual manner, with scissors and sutures. My method is to use three simple sutures, one far up in the nostril, one at the epithelium of the lip, where the cutis terminates, and one midway between these. The wound healed at every point by the first intention, and the child was put to the breast on the sixth day, which was as soon as lactation was established.

On the 22d of May, 1852, a healthy male child, with a harelip, was born in my practice. It had a cleft palate and superior maxillary bone, and the left alae nasi more than usually dilated, flattening the nose and giving a hideous expression to the countenance. I operated when the child was six hours old. I dissected up the skin very freely, separating the cartilage from the bone, and then brought the parts together with sutures, taking especial care that the upper one should be sufficiently high up in the nostril. Union by first intention followed, and the child nursed readily in six days.

For some years I have been more and more satisfied that operations in surgery are most successful as they approach nearest to the period of birth. In the earliest infancy the recuperative powers seem to be strongest. I have also remarked that the sensibility to pain is less distinctly marked at first, than after a few days. In the last-mentioned case of harelip operation, the child actually slept while the lip was being dissected from the maxillary bone.

It was formerly generally believed that the earliest infancy was the period when the system was most liable to convulsions. I have been led to doubt this maxim, and to believe that the nervous system is more easily excited, the more its function is called into exercise, and this is certainly not the case immediately after birth. A newly-born child also sleeps more, and when awake is less observant and prone to motions of the extremities, than after a few days of extra-uterine life. The anxiety and unhappiness of the parents, also, are of so much shorter duration as we operate earlier on the patient."

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